Gleanings in Bee Culture
"Created to help beekeepers succeed."
June, 1950 Vol. 78, No. 6

Adventure and Experiment in the Apiary

By Hugo Albrecht, Baltimore, Maryland
[This article was received in November, 1949.—Ed.]

This two-queen set-up simplified beekeeping for me

When everything goes wrong, that is the time to stop, think, and take inventory. A little thought at the proper time and in the right direction surely goes a long way.

It all started in May of 1947. After two weeks of steady rain, I expected to find almost anything during my weekend visit to the yard. But what I ran into far surpassed my fears. Under normal conditions I do not use queen traps. They are as much a nuisance as they are a protection, but I had them placed during the rainy spell just the same, as a precaution.

The first hive I examined, my best hive, one that was never much inclined to swarming, produced seven queens (seven live queens) plus plenty of queen cells. I was so busy chasing queens that I failed to see a swarm issuing from the hive adjacent until it was well advanced. (Due to an oversight, the trap was not properly placed.) While watching the excitement, another swarm emerged from the top of the hive I had been working on. The hive was still open and nothing was there to stop them. What followed next I have never heard of or seen before,

but I saw it with my own eyes. In the excitement both swarms got confused, merged as one, and when good and ready left as one. It was a spectacular sight!

Here I might say that bees are not new to me. I was born and raised around bees. There were always 20 to 30 hives in our yard and I raised the yearly supply of queens for my father when I was 12 years old. Bees are my hobby, my recreation, and the gains don't mean a thing in dollars and cents. But what happened that day was a tremendous loss and a failure in a swarm-control system which had worked perfectly for seven or eight years.

If ever there was a time to sit down and think, now was that time, and believe me I did.

An Idea Takes Form

For years I have toiled with the idea of a hive with the brood chamber accessible from the outside and a two-queen set-up that works every time. I want a system whereby those bees that find the congested brood chamber a nice place to hang around and loaf, are put to work, and by all means a better control of swarming. Taking this all into consideration, I came up with an idea that changed my whole yard and it has worked and produced beyond expectations.

All I needed was a special built bottom board, which I designed and had made. (Patents pending in U. S. A. and Canada.) This bottom board can be called a double-duty board because it acts as a flight board and has queen excluders built in it as well as other features. The rest of the hive is standard, no mutilation of hive bodies, no extra equipment or parts that get lost from one season to the other—just standard equipment of eight or preferably ten frames or jumbo size.

Having found what I was after, the idea is to take a strong colony, divide it into two, add another queen, and have brood chambers work from both sides into supers located in the center. If two swarms can merge and leave as one, so can two colonies be united and made to work as one. It works very successfully without any disturbance in the brood set-up.

The year 1947 was but an experiment and seeing the advantages, I changed over entirely the following season. This year (1949) I made sure of strong colonies in the spring, and I divided each one and thereby doubled my yard. This, of course, I can't do every year, as my time is limited for beekeeping. But this system has simplified beekeeping for me and reduced work and the swarming impulse considerably. No more aching back from heavy lifting, by far fewer stings, and it has changed a man-sized job into child's play.

And the results at the end of the year—amazing!

Unfortunately I have no time for migratory beekeeping. My yard is located permanently in a wooded section and has been for years. This year, for instance, due to rotating in farming, there was no clover or any nectar plants left for miles, only tomatoes and corn, and I was expecting a dismal year. Very little honey was on hand, when about June 1st nectar from tulip poplar started to come in. It lasted only about ten days. But because of the triple strength of the hives, nectar came in fast and furious. The first part of July two supers were removed from each hive completely sealed, some of the combs weighing nearly ten pounds. The remaining two supers, two-thirds filled, were left on. A total of 80 pounds of pure tulip poplar honey was extracted from each hive.

Much of the honey left on was consumed during the dry and hot months. But only one week of warm weather was needed to fill both supers with goldenrod and wild aster from the nearby fields. And running short of storage space, they filled every space in the brood chamber to such an extent that in a few cases combs had to be taken out and replaced with empty ones to keep the queens active. In one instance I left out a comb in one of the supers; in this space the bees built a full-sized comb, which is very unusual for late fall.

This adds up to about 150 pounds per hive. Quite a difference, compared to my usual 40 pounds per hive, annually, before this change was made and with half the amount of work, considering that it was derived from just two sources and two short flows. Judging from the above results, this double set-up should be ideal for comb honey pro-

(Continued on page 383)

Pollination Service and Moving Bees

By Lee H. Watkins, Berkeley, California

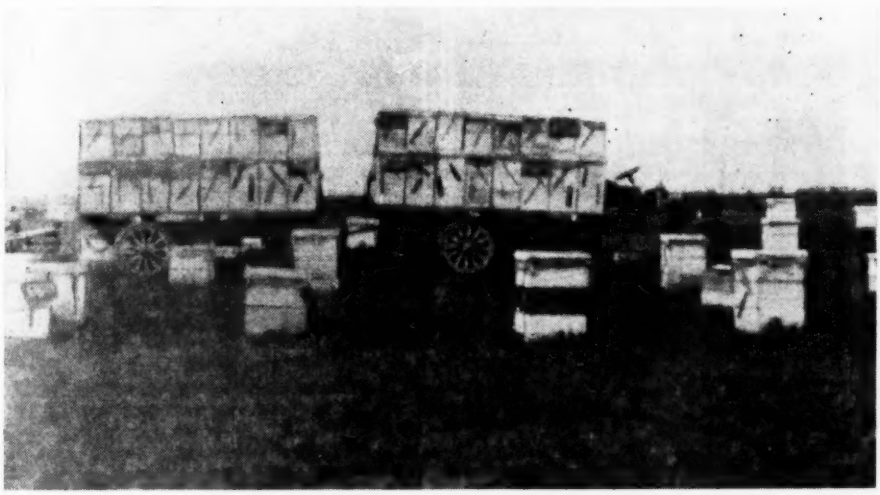


Photo taken in 1927 when we were still using cleats

There is an ever increasing demand for bees to be used in pollination service and, from all indications, the demand will rise sharply in the next few years. As more farmers learn the vital need for bees to pollinate their seed and fruit crops, and thus become more willing to pay for the use of bees on their farms during blossom time, more and more beekeepers are going to increase their incomes by furnishing bees to farmers.

Every beekeeper knows that one strong colony in the spring will pollinate more flowers than three or four ordinary colonies, and if the weather is bad, as is often true during the blooming period, a strong colony will visit ten times as many blooms as an ordinary one. It will not be long before some sort of definite standards will be established as to colony strength, and the beekeeper will be paid accordingly. From this it follows that, as in honey production, the strongest colonies will be the most profitable.

Furthermore, in pollinating service, the ability to move bees onto a farm on the day they are needed, to place them where they will do the most good, to haul them out if spray poisoning necessitates a sudden move, or to remove them as soon as they are no longer needed, demands a flexibility in bee hauling that the old methods employing the use of screens and cleats will have great difficulty in meeting. On the other hand, moving bees without these encumbrances makes it a relatively simple matter to move bees whenever and wherever needed. This, plus the great saving in labor costs and in the elimination of losses incurred in smothered and tortured bees, should cause all beekeepers who still screen their bees to give serious consideration to changing their present methods.

Moving Bees Without Screens

Thus it was with interest that I read the articles in the June 1949 issue of this magazine by Clarence Tontz and Dr. G. F. Townsend respectively. These writers, along with C. M. Isaacson in the July "Second Glances" reminded me once again that outside of California few beekeepers have yet learned to haul bees without screens. Since my article "Moving Bees Without Screens" appeared in the November 1939 issue of The American Bee Journal, (pp. 526-7), a number of other papers have appeared from time to time, written by beekeepers who say that they have found moving bees without screens is quite possible, at a great saving in labor costs and unharmed bees. But there ap-

pear to be many beekeepers who still are not convinced that it can be done with safety. Just what they are worrying about I cannot understand, for we have been hauling bees without screens for 23 years and have not had one iota the difficulties we were continually running into when we screened our bees. In my above mentioned article I went into some detail as to how to move bees without screens, and after ten more years of experience I still see no reason for changing my advice.

I assume that Mr. Tontz was referring to my paper of 1939 when he wrote of the difficulty "the beekeeper" experienced in trying to convince the other beekeepers that screens were not needed. Another surprising thing is that the idea of moving bees without screens was by no means a totally unheard of thing. My father often hauled bees on his wagon before 1914 and he never used screens. Also O. W. Stearns of Selma, California, a well known beekeeper who retired about 1920, hauled bees for years on his Reo Speedwagon and never did stop them up. That would have been an impossible job in his case for he was of the old school of the more entrances the better, and his hives were little more than bee sieves. He simply threw a canvas over the load when he started down the road. Then again, there is a short passage in Root's "ABC and XYZ of Bee Culture", 1917 edition, page 524, wherein it is explained how to move bees on a wagon or truck without the use of screens.

But these straws in the wind fell unheeded, probably because the possibilities of this simplified method were not realized until the coming of pneumatic tired trucks and good roads. As it happened, my father and I stumbled upon this method just about when the soft-tired, fast trucks were coming into common use. Actually, we hauled bees for a year on solid-tired trucks. When we purchased a truck in 1927 with pneumatic tires we soon learned that cleating the supers together and nailing the lids down was also unnecessary. That this simpler method must be practical is indicated by the fact, as pointed out by Mr. Tontz and myself, that the use of screens in California is a thing of the past.

As soon as we stopped screening

Mr. Watkins examining a frame

bees we noted that they did not continually fuss and fight, but remained quietly in their hives going about their duties, or if the night was hot, clustered on the outside. I am quite convinced that a strong colony of bees which is confined on a hot night, age a week or more, not to mention the damage to the brood and combs. Bees, when confined like other animals, develop very quickly intense claustrophobic reactions and literally wear themselves out trying to escape. Nor is the sight of trickles of honey running out of the entrances of smothered screened hives a pleasant sight to any beekeeper.

I was pleased to find confirmation for the above statements in Dr. G. F. Townsend's article in this magazine (p. 350, 1949), where he writes that of the many truckloads of bees hauled in Ontario under government controlled conditions, the unscreened hives came through in much better condition than those that had been screened. I quote:

"The bees in the screened colonies appeared to be worn out, while those which were moved in colonies which were not screened were quite active and ready to go to work. The greatest production was in the colonies which were not screened."

This last sentence might well be pondered by those who still insist on using screens.

Every year bees are hauled further and more frequently. But, as Mr. Tontz points out, the law of diminishing returns begins to operate heavily on long hauls; so, unless the beekeeper is to be paid much more for pollination service or makes larger crops here in Cali-

(Continued on page 385)

Queen Rearing

A System Which Involves the Use of a Two-Queen Hive for Cell Building, as Well as a Principle that Reduces Labor

By James W. Bain, Marion, Ohio

[James Bain, at one time a queen breeder in The A. I. Root Company's apiaries and a contributor to Gleanings during the years, has had many years of experience in rearing queens. His article should be of interest to backlot and commercial queen breeders alike.—Ed.]

For the last half century our ambition has been not only the production of superior queens but to simplify and minimize the labor involved. To accomplish this required years of study together with hundreds of carefully conducted experiments.

From time to time, various systems of queen rearing have been presented to the readers of our leading bee journals. After testing many systems we find that for our locality none of them compares favorably with the system herein described.

The writer has always maintained that the best of queens could and should be produced in such a manner that the normal activity of a colony is in no way retarded. The hive described makes this possible.

The Queen Rearing Hive

The bottom board is a combination of two 10-frame bottom boards so designed that the entrances face in opposite directions. An entrance 1⅛ inches deep by 12 inches long cut through the side of the bottom board is provided for each colony. An additional opening at the rear of each bottom board to accommodate a Boardman feeder makes it possible to feed either colony while cells are being finished in the lower story.

The hive body is the same width and length as the bottom board. A partition in the center divides the body into two 10-frame compartments. The greater portion of this partition is cut out to accommodate two metal-bound zinc queen excluder panels, allowing a space of ½ inch between the panels, thus preventing the queens from coming in close contact with each other yet permitting the bees to pass freely from one colony to the other, having access to the entire hive. Ten-frame queen excluders are used in connection with queen-rearing operations. The packing rim, used only in winter, slips down over the food chambers affording ample room for packing material above the food chambers. Two ⅝-inch holes near the bottom of a packing rim are in line with similar holes near the bottom of the food chambers making upper winter entrances. A telescope lid covered with galvanized iron fits snugly over the packing rim.

Queen rearing hive with winter cover

Two wood hive covers with two blocks nailed to each cover and bored out to accommodate 5-pound glass honey jars with perforated caps serve as feeders while cells are being finished above excluders.

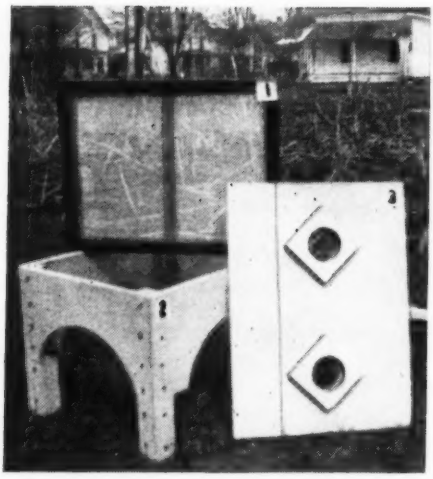
We use and recommend shallow extracting supers holding frames 5⅜ inches or 6¼ inches deep in connection with this hive.

We do not recommend full-depth hive bodies used above queen excluders in the production of queens. Better results will be obtained with shallow supers.

How to Operate This Hive with the Two-Queen System

With strong colonies occupying each compartment together with one shallow super each, all of which must be well stocked with brood and bees, we proceed as follows:

First Step: Separate the supers from the brood chambers below by the use of 10-frame queen excluders confining one queen to each brood chamber. We prefer to confine the queen in one colony above the excluder and the queen in the other colony below the excluder. In so doing we keep the queens separated as far as possible. Have



Support, bottom screen, and cover for cell accepting unit.

Cell accepting unit complete with feeder jar on top.

in readiness at this time two bars of accepted cells, 14 cells to the bar, to be placed in the queenless portions of the colonies for completion. In four days after installation of the cells they will be sealed, at which time two more bars of accepted cells may be given. Four days later both bars must be removed and stored above an excluder over any strong colony and always between frames of brood. We usually store them above the brood on cell-building colonies until they are introduced to nuclei, or caged. Shallow frames of brood are always available in nuclei containing the breeding queens.

Second Step: As soon as the finished cells are removed, shift the queens of both colonies to the now queenless compartments from which the finished cells were removed. At this time have in readiness two more bars of accepted cells, one for each colony, to be placed in the compartments just made queenless by shifting the queens. Four days later two more bars of accepted cells may be given.

Thus you see that shifting the queens every eight days or at the completion of the second bars of cells and operating at full capacity, enables the operator to produce approximately 200 finished cells every 30 days.

Making the Graft

For the benefit of those who may not understand the technique of grafting cells and getting them accepted and ready for the cell-building colony, the following appears to be in order, although space does not permit many details.

To simplify grafting we reduce the depth of the cells over the desired larvae to a depth of about ⅛ inch. To accomplish this we make use of a very sharp knife, laying it across the frame and with a sliding motion reduce the cells to the desired depth. In so doing this will expose to view hundreds of larvae just right for grafting. The larvae lying there in saucer-like cells makes the choice and transfer of larvae most simple.

Next, have everything in readiness and do the work as quickly as possible. Now go to the nucleus occupied by the breeding queen, remove one of the special frames that was placed in the nucleus four days prior to the time of grafting. It should contain hundreds of larvae from eight to twelve hours old such as we use for grafting. Brush the bees off (do not shake), reduce the cells to the desired depth, and make the graft as soon as possible. Install the grafted cells in the top of the

cell-accepting unit, described later. To do this remove the feeder jar, raise the flat cover up at one side, then quickly place the frame holding the bars of freshly grafted cell cups in the space previously provided.

As soon as the graft has been installed, hold the frame from which you made the graft under water pressure to dislodge all the remaining small larvae, and return it to the source from whence it was removed. In just four days it should contain another lot of larvae just right for grafting. Two such frames kept in the lower story will provide larvae for grafting every other day.

The graft now completed and installed, leave them thus confined until eight a.m. the following day, at which time remove the now accepted cells to the cell-building colonies for completion. Then return the supers of bees to the source from which they were taken.

Please note that shifting the queen from one compartment to the other makes possible the great advantage of placing the accepted cells in direct contact with the bulk of the nurse bees in the colony together with thousands of eggs just hatching and insures having cells **lavishly fed.**

Our cell-building colonies not only supply us with hundreds of fine cells but in addition they care for all finished cells, caged cells, and virgins until they are introduced to nuclei. When cells in all stages of development together with caged virgins are present in the cell-building colonies, we advise the use of clipped queens to head the colonies as a safety measure against swarming.

If for any reason a queen is to be replaced, introduce the queen between frames of brood above the excluder. After she has begun to lay she may be placed below if desired.

In some localities while queens are confined to the upper story bees will store an over-supply of pollen in the lower brood chamber. Such frames should be removed and replaced with drawn combs, otherwise the population of the colony will be dangerously impaired making it unfit for cell building.

The Accepting Unit for Grafted Cells

For many years we made use of the grafting box, and while it served its purpose with commendable results, there are objectionable features, such as taking bees from various hives and shaking them through a funnel. This created more or less disturbance in the yard. The following plan simplifies the matter, reduces the operations to a minimum, and the results are all that could be desired.

The illustrations are self-explanatory. However, a brief summary of the parts involved may be helpful.

First, the supporting table minus a top, Fig. 2; second, a rim, both sides of which are covered with ⅛-inch mesh galvanized hardware wire screen, separated by a space of ½ inch, Fig. 1. Next, a flat cover with blocks securely nailed on top and bored out to accommodate 5-pound honey jars with perforated caps used for feeding, Fig. 3.

How to Operate

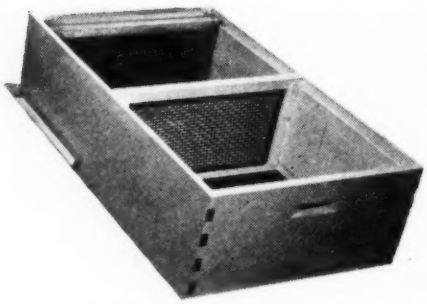
Remove from the tops of any strong colonies in the yard (at times these may be taken from the strong cell-building colonies) two shallow supers well stocked with bees and honey, and place these on the double-screened rim on the supporting stand. This double screening is to prevent the possibility of bees passing honey through a single screen to robber bees outside. Now remove one of the center combs from the top super. This will provide room for the frame holding the bars of freshly-grafted cell cups.

Make sure there is no queen or unsealed larvae in either super. However, frames of **all sealed** brood placed in the top super and on each side of the freshly-grafted cells are helpful and recommended.

Next place the flat cover on, filling one of the feeder jars with honey or sugar mixed with an equal quantity of water.

We make up the grafting unit at one p.m. At this time most of the working force is in the field and mostly young bees are in the supers. One hour after the bees have been confined we make the graft. This, of course, means transferring very young larvae from worker cells into artificial queen-cell cups, using a grafting needle. Later in the season when bees become less active we allow two hours before the graft.

As soon as the grafting unit is made up we place it in a shaded or



Two-queen hive showing double-queen excluders between the two brood chambers.

well protected location. **Never leave it in the sun.**

Feeding the Cell-Building Colonies

Feeding is of the utmost importance if strong prolific queens are to be obtained. An abundance of food must be available at all times, day and night.

Cell-building colonies must be kept at maximum strength. A strong force of bees, an unlimited supply of food, and ample ventilation are absolute requirements—in fact, the key to successful queen rearing.

Many years of experience has taught us that diluted honey is the most practical food to use in queen rearing. We use it in the proportion of three parts water to two parts honey. Slightly more water may be used if desired.

Mix only daily requirements at a time. Never mix previously prepared food with fresh food, as it will soon sour making it wholly unfit for food.

As soon as the food is stored in the combs and is ready to be capped over, we extract it, dilute it, and feed back. All the time cells are being finished in the lower brood compartments, make use of the Boardman feeders in the bottom board. Keep feeder cans clean.

Ample storage room must be provided at all times above the cell-building compartments. Do not overlook this requirement. These strong cell-building colonies stimulated by constant feeding are very active. They store as much or more surplus honey than any colonies in the yard.

The Queen Mating Yard

In the selection of breeding stock great care must be exercised in the selection of queens, particularly queens for drone production. We prefer all queens selected for drone production to be sisters. Hereafter all queens selected for breeding purposes will be from queens that have mated with the drone but once. We accomplish this by the use of a queen excluder covering the entrance in the following manner: When introducing virgins we select a number of the choice queens. By use of the excluder we confine them to the nuclei until five days of age. The morning of the fifth day we turn the excluder, permitting the queen to fly. At noon we look at the queens for evidence of mating. If she has mated we adjust the excluder preventing further access to the drones. If not mated we look again in the evening. All queens that have mated are now confined to the nuclei until they are found to be laying. We continue this procedure until the desired results are obtained.

Our mating yard is located three miles from the queen-rearing yard. The yard is composed of from six to ten colonies headed with selected queens. These colonies produce sufficient drones for any number of nuclei. All nuclei are made up at the queen rearing yard, then transferred to the mating yard.

We use with remarkable success small nuclei mating boxes holding two frames, each 4 x 5 inches. These are made up each with a small number of bees and a young virgin, confined for eight to ten hours, then in the evening taken to the mating yard. Ten days later, after the virgin queens have mated, all are picked up and returned to the queen-rearing yard. Queens are removed, nuclei boxes restocked with food, bees, and virgins ready to be taken out again.

Caution: Each nucleus must contain at least one frame well filled with honey. A shallow extracted super will hold 36 of these frames. These supers stored on the queen-rearing hives always provide us with solid frames of honey as well as bees in making up the nuclei. One frame of bees is sufficient. Frames with bees returned from the mating yard are again returned to the queen-rearing hives. Never use the same bees for a second mating. Always restock the nuclei anew.

Nine especially designed frames each holding four nuclei frames just

fill a regular shallow extracting super.

Preparation of the Queen-Rearing Hive for Winter

At the close of the queen-rearing season, remove one of the zinc queen-rearing panels, substituting a board of the same dimensions, fitting bee tight, thus dividing the two compartments into separate independent colonies. Next, supply each colony with a young vigorous queen, remove the two queen excluders, place a super or hive body well filled with sealed stores on top of each colony. Then place the packing rim over the food chambers and fill all vacant space above the food chambers with packing material.

Two queen cell building colony in use with summer wood covers taking feeder jars on top. The compartments face in opposite directions.

Now place the galvanized lid over the packing rim, and your colonies are in good shape for winter.

During the winter we prefer to have all colonies face south. To accomplish this with the queen-rearing hive we close the main entrance of one of the colonies and at the same time remove the Boardman feeder at the rear of the bottom board, thus permitting both colonies to face the same direction. This arrangement is used only in winter.

It is the wish of the writer that all who try this system may enjoy the same pleasure and satisfaction that we have enjoyed these many years.

Note: None of the special-made equipment featured in this article is available or offered for sale.

Dry Sugar Fed on the Bottom Board

By J. H. Sturdevant, St. Paul, Nebraska

Placing dry sugar on the bottom board of the hive to be fed is a success and may be done at any time. When there is a flow on the bees will desert the dry sugar until a dearth of nectar when it will be taken up again.

Dry sugar is safe and will not cause robbing. If the bees start carrying it out place a piece of lath across the lower part of the entrance or tilt the hive back by raising the front of the hive one or two inches, placing a block underneath.

Sometimes the bees do not readily start to use dry sugar. At such a time a splash of water thrown in to liquefy the granules slightly will usually start the bees working it.

Caution: If dry sugar is poured down through the top bars, and if eggs or young larvae are in the cells below, the sugar may enter the cells and kill or smother the larvae. It is better to lift the hive and throw the sugar on the floor board.

[Mr. Sturdevant is right. Sugar granules may enter the brood cells containing unsealed larvae, if sugar is poured down between the combs of brood, as we have learned from experience. We have tried placing the sugar on the inner cover with the center block removed and this seems to work quite well. The bees will go up through the small hole in the inner cover to work on the sugar.—Ed.]

A Honey of a Hobby

Health and Happiness are Where You Find Them
By Mamie M. Linden, Dallas, Texas

"A swarm of bees on the redbud tree by my window?" I gasped to the yardman, over the phone.

"Biggest, finest swarm I ever saw!" he answered.

"Could you put them in a hive for me?" Dubiously, I asked.

"No-um, but I could make the hive if you can get somebody else to put them in it. I wouldn't get that close to them stinging rascals for a million dollars."

The war and manpower shortage being what it was in 1944, a million dollars would not have helped much in getting a man to do a more pleasant chore than to saw off a limb with a swarm of bees on it. But I didn't argue the question.

"You have the hive ready by the time I get home from work and we will get them in some way." I dared not tell him I would do it myself. Neither did I tell my boss, who overheard the conversation and knew my intention.

"How do you think you are going to be able to see how to get that report ready if you go fooling around with those damn bees?" He was a Major but his former M/Sgt. voice inflection showed!

"Of course," interposed a friend standing near by, "This likely won't happen to you, but a bee stung a friend of mine just **once** behind the ear and he died in less than five hours—never regained consciousness!"

"On the back of the neck is just as fatal as behind the ear," added another kibitzer. Then he gave the details of the death of one of his friends: "She was just walking through the garden and a bee 'bopped her one' right on the back of the neck. Next day they buried her!"

Their "Friendly Undertaker" advice did give me pause. But I had learned during my husband's two-year absence that I could do many things if I had to—and many other things if I wanted to badly enough. I wanted that swarm of bees enough to take the risk!

To me bees were fascinating creatures that stung some people and let others alone. I belonged in the latter category due, I felt, to my brother's frequent admonition, "Just don't be afraid of them and go on about your business and they won't sting you." Going about my business, as he interpreted it, was staying out of his way while he went about his fascinating hobby of locating bee trees by sighting and following bees in flight. None of my past experiences with bees fitted me for the task at hand.

I recalled one time that I was permitted to watch from a screened porch while a rancher neighbor robbed his one hive of bees. I also remembered the many times, as a child, that I helped my brothers "settle" a swarm of bees. My contribution consisted of helping out on the noise. We clanged cow bells, beat on old dishpans, and screamed to the top of our lungs—drowning out the hum of their queen, I was told. When the bees showed signs of lighting on a tree or fence post, I was shooed off to the house while my brothers went about the mysterious business of hiving them.

But as I eased my old car and retread tires homeward through heavy traffic, over hot pavement, I remembered one experience that I might use.

The year before, while visiting my parents on their ranch in South Texas, my father and I practically stepped on a swarm of bees. They had settled on a limb of a small shrub that bent to the ground under their weight. Dad left me to stand guard over them while he went for a hive.

By the time he got back I was thoroughly fascinated with that brown, buzzing ball of bees—man's friend and enemy. They would work for you for life or lose their lives trying to sting you to death! Dad either had no fear of bees or a lot of know-how. He broke the limb off and holding it near the ground by the tilted-back hive began shaking the bees off and raking them into their home-made hive. I picked up a long stick and gingerly helped rake them off the ground into the hive.

That experience would come in handy getting them into the hive. But I hadn't the vaguest notion how to get them off the high limb. How-

ever, as I nosed the car into my driveway and saw that huge mass of bees hanging, like an animated half-bushel basket on the redbud limb, hive them I knew I would!

At first I wondered why such a swarm had picked me for their benefactress. As I watched and became fascinated by the squirming honey makers I resolved they were going to become **my** benefactors! Lately, I was getting too close to problems at the office. Just how bees were going to help me, a Personnel Coordinator, coordinate my own personal world I didn't know, but I had a feeling they would.

The yardman came to meet me, bringing the hive he had made. He was aghast when I told him **I** was going to hive them—somehow. Finally, he came up with the bright idea of **him** standing behind the tree and sawing off the limb while **I** kept it from hitting the ground. While he sawed we kept our spirits up by kidding ourselves about the possibilities of outrunning them. We left the water running full-force in the garden hose—just in case. Sawing the green limb and lowering it to the ground took only a few minutes. Seconds later our breathing reverted to normal!

Like my father, we placed the hive as near the swarm as possible. I began pushing them gently—ever so gently—under it. But I couldn't convince them they were able to go to the top of the hive.

"Tap on the hive and see if that won't help," I ordered the handyman.

"What with?" he asked, not eagerly.

"Just anything. Your pocket knife or a rock will do."

I looked around to see what was holding him up. He was bringing a garden hoe! The only thing he could find that would put enough distance between him and "them stinging rascals".

He kept up the tap tap tap, while I pushed them under the hive. Pretty soon I was shoving them around as though I were complete master of the situation. Darkness overtook us before we got the stragglers into the hive.

We left the hive on the ground under the redbud for three days, "So all the bees will get inside and become accustomed to the hive," I explained to friends at the office. The truth was—it took me three days to convince myself that I could pick up that box of flying dynamite and transport it to a peach tree 50 yards away.

Really, there was nothing to it, I found, except dead weight that I staggered under as I walked, and the exasperating oversight of not having a base ready to set the hive on when I got there. "A fine display of forethought for an apiarist," I berated myself. My thoughts were already away ahead of the actualities!

I knew I couldn't just stand there holding the hive with bees swarming all around me while the yardman hunted for something to use for a base. If I put it down in the soft, newly-plowed garden the bees could not get in or out of the hive. I was not worried about the ones inside. Those eager beavers returning to the hive laden with pollen were looking for a place to land and I was **IT!** There was nothing for me to do but lay the hive on its side while we fixed a base. I eased it down and stood poised, ready to run should they come flying at me with loaded weapons. They completely ignored me!

That evening as I sat in the backyard swing looking at my orchard and apiary — two peach trees and one bee hive—I felt a glow of satisfaction and accomplishment.

That spring and summer my husband fought overseas, and I fought the battle of "nerves" at home. Before and after work I spent many peaceful hours sitting on the ground watching the bees at work. I understood little of what they were doing. I didn't know a worker from a drone nor beebread from nectar. But I sentimentalized their natural instincts. I gave them traits they could not possibly possess—or could they? I watched them take off from the landing in front of the hive as graceful as an airplane from a flight deck. Others were constantly flying in with their golden cargo. "If you want a thing done right, give it to a busy person," I had been told. So, onto these very busy bees I loaded my worries and anxieties. When I felt a worry coming on I smiled to myself and thought of my bees sprinkling my cares and worries over the flowers on the hillside and the clover fields in the valley.

Absurd? of course. But if I felt less hectic during a busy day, letting bees scatter my worries on a cool hillside and transporting my cares to beautiful blossoms; if I said less often, "I'm so tired and nervous," then my bees were doing exactly what I kept them for—and more.

When I robbed the hive (slaughtered is a better word when taking honey out of antiquated hives) there was enough honey for all my neighbors, enough honeycomb for all their children to chew, and 24 pints of golden honey on my pantry shelf!

Of course I have long since learned that my winged brown bombers are Italian bees. After the war they were put into a patented hive with two supers. Each year I still eagerly await their first amber cargo. But the joys, spills, and thrills of that old home-made hive and the survival of my charges in spite of webworms and my applications of 100 percent DDT will long be remembered.

As you know, when the bees came I knew absolutely nothing about them except their sting and propensity for making honey, neither of which was of major importance to me then. I needed diversion and a consuming interest which they brought me. Today tubercular patients in a local hospital are finding surcease from frustration, and a quiet relaxation, in much the same way by watching bees in glass houses.

Last year I became a "one-colony" member of our county beekeepers' association. Whether you have one colony or a thousand, every beekeeper should be an **active** member of some beekeeping organization. Magazines and literature give us much that is good and also much that is contradictory. But one evening spent with a zealous lot of beekeepers, listening to their lively discussion of Caucasian versus Italian bees, hives, methods, and problems in your own community is priceless. Naturally, I didn't have the nerve to volunteer the information to that group of sturdy men that I kept bees for my nerves!

This past year my city back yard bees surprised old beekeepers and me by producing some of the finest, clearest clover honey in the county. Whether they went beyond their usual fruit blossoms and cotton patch or someone planted clover nearer them is their secret. Perhaps it is their many secrets of honey making and home making—complete with central heat and air conditioning—that makes them such a honey of a hobby for me. But their delicious honey that goes so well on hot biscuits has really been the least of my rewards. In beekeeping I found a fascinating hobby that brought me pleasure, relaxation, and a gratifying sense of accomplishment.

Fireproofing the Smoker

By C. E. Thomas, Corvallis, Oregon

For several years I have been putting a cork in the nose of the smoker when finished with it. The fire is promptly smothered, and a minimum of fuel is wasted.

This season I have been using with much satisfaction rotten wood from an old fir stump, air dried. To start the smoker, light a loosely crumpled quarter sheet of newspaper from the underside, drop into the smoker, and pack in fairly snugly rotten wood in walnut-sized pieces or smaller.

I found it desirable to jar the smoker occasionally to compact the fuel bed, but on two occasions was dismayed to discover a spark had popped out through the blast-hole to ignite my coveralls. On the second occurrence the bees discovered the hole before I did, with unpleasant consequences.

To prevent further trouble, such as starting a fire in tinder-dry grass in our dry season, I bound a strip of window screen wire mesh over the blast hole. The smoker is now quite safe and the efficiency is not impaired.

Four Years with Bees

By S. M. A.

(Continued from May)

My first year with bees was hectic at times and it was hard to satisfy myself that I had really done them justice with all my bungling. They became very cross toward the end and I do not blame them. We went into the winter almost enemies but time, the healer of all grievances, did its work during the long cold months and spring found us making friends over jars of sugar syrup and pollen substitute.

The accompanying picture shows one of the hives at the first spring check-up. The record of this colony was splendid as were all the others last spring. For the first time I have wintered the bees in three-story hives, but I was forced to as there were so many bees in the hives the fall before. Results were gratifying and feeding sugar was eliminated entirely. The colonies built up with amazing rapidity. This hive at the time had 16 combs of brood, five frames of fresh nectar and pollen, and the remainder was sealed honey from the winter supply. All through the brood were ample supplies of old and fresh pollen and honey.

Spring check-up shows my three-story colony in excellent condition.

In this picture the winter case had just been removed and the hive is still on the bottom board and stand for the winter. The dark strip on the stand is a piece of asphalt roofing for greater floor warmth. The floor of the stand is raised about four inches from the ground for free circulation of air.

Early in March the square frame to the right was slipped in between the inner cover and super and cakes of pollen substitute placed on top of the frames. Then the hive was closed and with the exception of removing the entrance cleat on warm days and scraping out dead bees from the bottom board they are not disturbed again until this investigation in May. The cleaning out of the hives can sometimes prove to be a very amusing occupation. Usually the guards at first resent your well meant kindness but on learning that you are trying to help them their attitude changes and they begin running hither and thither to carry out first one and then another dead bee in an effort to cooperate.

Here among the berry bushes and fruit trees they nestle cozily all winter and here they work their little lives away during the summer months with a zest that puts moderns to shame. There are always some plants of borage to be found and several bushes of French pussy willow which are a supreme attraction in early spring and it is one of the greatest of their spring joys when a nice warm sunny day turns up with pussies in full bloom. Into the hive they come in clouds with their golden load, little Dutchmen in their full breeches, singing a song of joyous content.

Little bread winners on dainty wings,
Teach me the song that your heart sings;
Grateful to God Who day by day
Gives you choice morsels to whisk away.

Producing and Packaging Chunk Comb Honey

By H. F. York, Jr., Jesup, Georgia

[The writer of this article is a son of the well known bee shipper H. F. York, Sr. He devotes some of his bees and time to the production of chunk comb honey, for which there is a demand.—Ed.]

Chunk comb honey has been marketed in the South over a long period of time in varied containers. However, when the glass manufacturers brought out the square jars, thus standardizing the pack, chunk comb honey has since been the staple product of the majority of the honey producers in the South and Southeast. Only the producers of such choice honeys as white tupelo and sourwood still command a premium price for their honey in the extracted form.

Although the South is the logical place for comb honey to be packed because the honey does not have the tendency to rapid granulation as do most northern honeys, some northern chunk comb honey has appeared on the market, and when packed wisely without overloading the wholesaler and retailer it has found a ready sale. After all, chunk comb honey is a perishable product. Upon granulation it loses its attractiveness, and a satisfactory method has not been found to liquefy the package without damaging the appearance of the comb. For this reason slow granulating honeys are to be preferred for packing chunk comb honey.

Producing chunk comb honey is not so difficult as section comb honey but more skill is required than in the production of extracted honey. To produce any type of honey the main prerequisites are **a good strain of bees, strong colonies, and a good honey flow.** In producing chunk comb, as in section comb, it is necessary that only new foundation be used. The foundation should be thin super and should extend from the top to the bottom of the frame. To force the bees to work from less than full sheets will have a tendency to retard the building of comb and will result in less comb honey. When combs are drawn out from full sheets of foundation, filled and sealed by the bees, they make nice tender combs for a good pack of comb honey.

In section comb honey production, colonies not up to par are used for extracted honey production which is marketed separately. In chunk comb honey production, you have to market the extracted with the comb, so you will need anywhere from 50 to 70 percent of your total production as extracted honey, depending upon the amount of comb placed in the jars. Knowing that you need both extracted and comb honey for your package, you can proceed in setting up your colonies for production. You have your choice of two methods. Select the one best adapted to your needs, equipment, time, and honey flow.

Single Brood Chamber Method

In the first method, cutting down the colonies to a single brood chamber, you should select only the strongest colonies to produce the comb honey. In working these colonies you should take all the sealed brood available in the colony and place it in the bottom brood chamber.

It is important to select the oldest brood to give the queen laying space after the brood emerges. Since you will have more brood available than you can put in the bottom brood chamber, you must shake all the bees off the remainder of the frames in front of the hive. Take these frames containing young brood and honey to the weaker colonies for equalizing or place on top for storing of the needed extracted honey as the rest of the brood hatches.

During this process if the queen should be found while getting the hive ready for supers, the queen should be clipped, as a safety measure, to avoid possible swarming and losing a large force of bees at the time they are needed most. A hive full of bees with every frame containing brood, honey, or pollen may be given two shallow supers. If operating a small number of colonies, one shallow super may be given, rechecking later to add additional supers as needed.

In general, if the colony is strong enough to completely fill the double brood chamber it will be able to take care of the same amount of room, or the one brood chamber

and two shallow supers. Forcing the bees down into the single brood chamber makes it necessary for them to draw out the foundation in the supers to store the nectar coming in. Since the one bottom chamber contains all sealed brood without empty frames, they do not have any alternative but to immediately start work in the supers.

Using Double Brood Chambers

An alternate method is producing comb honey on top of two brood chambers. This method does not require the manipulation that the former needs. The most important point is having the colony strong enough to enter and work in the supers. If the nights are cool or if the brood combs are not largely filled with bees, brood, honey, and pollen, the bees will be slow to enter the supers. They can often be induced to enter the supers by the use of bait combs—combs that have already been drawn. The bees will start work in the bait combs and work across to the foundation. Since you are planning to take both extracted and comb honey from the same hive, you may secure the extracted honey by extracting the wall combs in the top brood chamber, from drawn combs in the shallow supers, or from combs that, due to pollen, travel stain, or other reasons, are not desirable to be packed in glass. In this method, since the colonies are not as crowded, you have to be more careful to see that the comb honey is fully capped. Only honey that is capped over is suitable for chunk comb packing. For this reason you have to add the supers only as needed. Toward the end of the honey flow it may be necessary to shift supers from one colony to another to insure that the majority of the combs are capped, placing the uncapped combs on the strongest colonies.

Both of these methods have their advantages and disadvantages. During short honey flows, when colonies are perhaps not quite as strong as they should be, crowding the colony into one brood chamber is the best method. But this method also has the disadvantages that the bees are more inclined to swarm from crowding, the cappings of the honey will be more travel stained, the bees find it easier to store pollen in the supers, and it takes considerably more labor than producing the comb honey on top of the two-brood-chamber hive.

A two-story brood chamber colony that put up a good crop of section comb honey.

Using two brood chambers has the advantage in less work being required, a major consideration when a large number of colonies must be operated or where labor is a large expense item. Also, with two brood chambers the bees are less inclined to carry pollen through the second brood chamber into the supers, and the queen should not find it as necessary to use the supers for brood rearing. In addition the same colonies will produce both the extracted and the comb honey needed, a decided advantage when a large number of colonies are operated. In two yards of bees, both of equal strength under optimum weather conditions, there probably will not be very much difference in the amount of comb honey produced per colony. In general, with short flows, cool nights, colonies not quite

as strong as they should be, produce chunk honey by crowding into the single brood chamber. When you have long flows, warm nights, colonies at their peak strength, produce chunk honey on top of two brood chambers.

Packaging Chunk Comb Honey

After producing the comb honey comes the packing of the honey. Packing in jars can either make or break the producers. An attractive method of packing is important. It is generally understood that to make an attractive pack not less than 40 percent of comb honey can be used, the surface of which must be at least 90 percent capped. The comb also has to be new comb and free of travel stain and pollen. The extracted honey must be clean, well settled, and free of foreign matter.

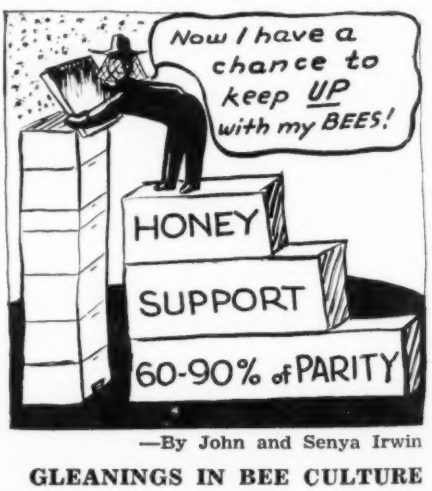
While there are several different methods of placing the comb in square jars, the three most commonly used for the 2½-pound square jar, the most popular size chunk comb package, are the face pack, three piece, and two piece. No matter which method you use, after checking for freedom from pollen, propolis, and other matter, and after cutting the comb from the frame, you should carefully trim any ragged edges before cutting into smaller pieces for packing. In the face pack you use two pieces of honey to fit the sides of the jar, high enough and wide enough to cover the flat portion of the side. Then two more pieces are cut to fit between them so that capped comb is showing on all four sides of the jar. To cut a standard shallow super frame for this, make a horizontal cut the length of the frame and wide enough to fit between the two large pieces in the jar. Then cutting the comb vertically into five divisions of equal length, you have enough pieces of comb with the exception of the wedge pieces, to fill two and a half jars of 2½-pound capacity. To keep this comb from floating after filling with extracted honey, it is necessary to anchor the comb by placing small pieces of comb on top, wedging the main body of comb against the pressure of the cap.

If you pack with three pieces of comb, the three pieces are of the same size as the side pieces in the face pack. You will find it difficult to pack this way in the 2½-pound jar if you use the eight-frame super or the ten-frame super with nine frames due to the thickness of the combs. It is easier to pack the three pieces from a ten-frame super containing all of the ten frames. This pack, like the face pack, needs to be anchored by small wedges of comb. Nothing is more unattractive in a chunk comb pack than to have the comb floating and twisting in the jar.

Using two thick pieces of honey in the jar usually does not give much over the minimum percentage of comb in the jar, but it is the fast method of packing. The frames are cut into equal divisions from top to bottom and to the height of the jar. Thus the comb acts as its own wedgs, eliminating much of the cutting and fitting that is required in the other two packages. In fitting this pack with extracted honey, and also in the other two methods, if the flow of extracted honey from the filler is directed between or in the center of the combs, the pressure will force the combs against the glass giving a brighter and lighter appearance to the finished pack.

In choosing between these three methods of packing you should select the way that will fit your equipment, give you the least amount of waste comb, and will attract the customer's attention. Remember, however, that the customer buys a comb package on the amount of comb represented and its appearance.

[It should be emphasized that only honeys that do not granulate readily—honeys with a high levulose content—should be used for a chunk comb honey pack.—Ed.]



—By John and Senya Irwin

It's Cookie Time

By Mrs. Benj. Nielsen

It's cookie time again! "And when isn't it," I just know you are thinking, especially if there are small fry in the family. Even Dad does his share when it comes to keeping the cookie supply depleted. But now with vacations in full swing and children hard at play, raids on the cookie jar will be even more frequent and severe. Dad coming in from work with the bees will really appreciate some steaming hot honey-sweetened coffee and yummy honey cookies to stay the inner man until mealtime rolls around.

Yummy drop cookies.—Photo courtesy Kellogg Co.

Honey produces such a delightfully golden brown cookie and a subtle flavor elusive to define and one that actually mellows and improves if you can keep any of the baked product long enough to age. Just one word of precaution: in baking honey cookies, temperatures must be kept low for honey scorches easily — and we desire a delicate golden exterior.

Good eating to you!

Honey Drop Cookies

One-third cup shortening, ½ cup honey, 2 eggs, well-beaten, ½ cup sour cream, 1¾ cups sifted flour, 1 teaspoon baking powder, ¼ teaspoon salt, ½ teaspoon soda, ½ cup chopped nutmeats, ½ cup chopped dates, ½ teaspoon nutmeg or 1 teaspoon vanilla, and 1 cup oven-popped rice cereal.

Blend shortening and honey. Add eggs and cream. Sift flour with baking powder, salt, and soda; add to first mixture. Stir in nutmeats, dates, flavoring, and rice cereal. Drop by spoonfuls onto lightly greased baking sheet. Bake in moderate oven, 375 degrees F., about 20 minutes. Yield: 2 dozen cookies (4 inches in diameter).

Honey Peanut Butter Quickies

One cup peanut butter, ½ cup brown sugar, ½ cup honey, ⅓ cup boiling water, and 2 cups prepared biscuit mix.

Blend peanut butter, brown sugar, and honey thoroughly. Stir in boiling water and blend with rotary beater or spoon until smooth. Stir in biscuit mix. Drop by small teaspoonfuls onto lightly greased baking sheet. Flatten with bottom of glass dipped in flour or press cookies with fork dipped in flour. Bake in moderate oven, 375 degrees F., 12 to 15 minutes. Yield: 6½ dozen cookies (1½ inches in diameter.)

Honey Chocolate Refrigerator Cookies

One cup shortening, 1 cup brown sugar, 1 cup honey, 2 eggs, 3 1-ounce squares unsweetened chocolate, melted, 1 teaspoon vanilla, 1 cup broken nutmeats, 4⅓ cups sifted flour, ½ teaspoon salt, 1 teaspoon baking powder, ½ teaspoon soda, and ⅓ cup sour milk.

Thoroughly cream shortening, sugar, and honey; add eggs and beat well. Add chocolate and vanilla; mix well. Stir in nut meats. Add sifted dry ingredients alternately with sour milk. Shape into long rolls. Chill thoroughly. Slice and bake on greased cookie sheets in moderate oven, 375 degrees, about 15 minutes.

It Was a Hybrid Buccaneer

By John Favinger, Asst. Entomologist, Indiana Dept. of Conservation

The March 1950 issue of this magazine contained an article entitled "It is a Flying Buccaneer". This article would appear well authenticated by virtue of frequent references to the World Book and to an excerpt from Edwin Way Teale's "Grassroots Jungle" in "Literature and Life" which appears to be a supplementary grade-school textbook.

The author has created a new and unusual type of predacious insect in dovetailing these two sources into one article. On checking these sources I find that the World Book references are concerned entirely with the praying mantis and the refrences to Edwin Way Teale's work refer to the robber fly, an insect that is vastly different from the praying mantis. These two insects are as different as the cockroach and the housefly, the mantis being a rather primitive insect while the robber fly is a much more specialized form.

The only points of similarity between the two insects is their predaciousness and the tendency of the female to eat the male if his attentions are not acceptable. Mr. Teale points this out and describes at great length the other attributes of the robber fly in a very readable manner.

The mantis and the robber fly differ considerably in life history and habits. The mantis belongs to the order **Orthoptera** along with cockroaches, crickets, and grasshoppers and has what is termed an incomplete metamorphosis in which the young resemble the adult insect in appearance and habits—developing gradually without undergoing a larval and pupal stage.

The robber fly on the other hand belongs to the order **Diptera** or two-winged insects, in which the mosquitoes and house flies are also classed. Members of this order undergo a complete metamorphosis consisting of egg, larva (maggot), pupa, and adult stages.

Although the two insects both feed on other insects, the manner in which they feed is different. The mantis has chewing mouthparts by which it bites off portions of its victim and, if undisturbed, it will consume the entire insect. The robber fly is equipped with a proboscis which enables it to pierce the tough outer integument of its prey and suck out the body juices, after which the solid body portions are discarded.

In the preparation of articles that deal with nature subjects, it is the practice of many authors to present many perfectly natural functions in a bizarre and misleading fashion. For instance, the actions of a robber fly in capturing and killing a honey bee can no more be construed as murder or cannibalism than those of a housewife in preparing a chicken for Sunday dinner. This is just a case where a stronger or more intelligent creature feeds upon another in order to survive himself. Such predacious insects, none of which, to my knowledge, are anything but incidental predators of the honey bee, are an important factor in the balance of nature that tends to keep any insect from becoming over abundant.

Not having made a study of the situation, I do not feel qualified to comment on the alleged depredations of robber flies on colonies of bees other than to say that I have never heard of any undue depletions by this insect. In fact, I have never seen robber flies present in numbers sufficient to cause any concern to beekeepers. In view of the way in which other material was presented in this article, I would be inclined to consider this account somewhat exaggerated.

In any event, had the article "It is a Flying Buccaneer" been put in two separate accounts each dealing with one insect it would be less subject to criticism.

Our Cover Picture

The bee on the blossom of the gourd illustrates the pollination service the bees are doing for agriculture.—Photo sent by John Tanner, Haysholm Gardens, Irvine, Ayrshire, Scotland.

Second Glances

By C. M. Isaacson

Comb honey production is a benfit to the whole industry in the present state of the market. And if Mr. Kosanke's system using two brood chambers can be successfully adapted to the needs of beekeepers in varying localities, it will make production much easier and more feasible for the average beekeeper (page 273). The point he makes that preparation must begin in the fall for next year's crop is well put, and is of course true for extracted honey production as well. Winter good colonies only, and prepare them so they will be good colonies **in the spring**—that is, as far as is in your power. Then, always assuming a honey flow of good intensity, supering is your main problem, and the article explains rather clearly what should be a successful method. A big thing to remember—super in time and freely to begin with, more carefully as the flow goes on.

Alaskan beekeeping calls for hardy men, says Prof. West (page 279). But just a word—forget about that "minimum of minus 20" in Minnesota. Our minimum is far below that, and our winter this year will match most Alaskan ones, I believe. Yesterday, May 8, I dug packs out of five feet of snow and found them alive but entirely broodless. This was the winter's snow—not just a spring storm. But with their short summer, high costs of bees shipped in, and undependable honey flows, Alaskan beekeeping is engaged in more for pleasure than for profit. There is always that — pleasure — to be found with bees.

Clear pictures can tell a story very effectively. On pages 280 to 282 one can see the rapid destruction wax moths can produce if conditions are favorable for their work. After looking at these snapshots, the item beginning on page 283 is surely pertinent. Keep in mind always that Cyanogas and methyl bromide are deadly poisonous, and that carbon disulphide is very explosive. Care should always be used with any fumigant, and with these especially. They are effective for their purpose.

Appetites don't need to be tempted with honey foods—they just take naturally to them. That Honey Orange Bread "tasted" so good in the description that I have already persuaded the "cook" to make it for me (page 285).

A colony that swarms need not be a total loss for a crop, says S. M. A. (page 286). That can be true where the flow is reasonably long—or the swarming occurs very early in the season—but where the main flow is contained in a period of three weeks or a little more, one had better catch the swarm. If you can, you may "save the day", as S. M. A. says, if you handle it correctly.

Divisions from powerful colonies can be very profitable if made far enough ahead of the main honey flow (page 290). We depend on them to make up all or a considerable share of winter loss. If started early enough, they need not be as strong as Mr. Newell's, however—I have started with two combs of brood, given sufficient honey and pollen, and had them build up to produce a crop fully equal to the average of overwintered colonies. But it is especially important not to stint on food—for some time these "splits" will have no nectar gatherers.

Abnormal queen supersedure has been a serious problem in some instances. To the Editor's mention of good stock to breed from, and an abundance of proper food for the developing queen larvae, I would add another factor that may influence queen quality and hence supersedure—suitable weather during the time such queens mate. A cool spell then may mean a whole lot of queens which may look good but fail early (page 296).

No winter losses if bees are inspected for stores in February, says H. J. Rahmlow. Certainly this is a good practice, and we save many colonies each year by early inspection, but the statement is too broad. I have seen many colonies die with an abundance of both honey and pollen available to them. Also it would be difficult to reach or inspect yards with roads blocked and packs deeply buried under snow. Climates differ, and as Editor Deyell said in his Talk a while back, it is impossible to make a specific statement for all parts of the country.

Orchard Pest Control and Bees

By G. F. Knowlton
Extension Entomologist, Utah State College*

Dr. G. E. Bohart and F. E. Todd observe honey bees and wild bees pollinating alfalfa in experiments at Newton, Utah, Legume Seed Research Laboratory, Logan, Utah.

Beekeepers and orchardists have felt concern with regard to the safety of honey bees and wild bee pollinators with the increasing use of such potent insect control weapons as parathion, DDT, lindane, benzene hexachloride, chlordane, toxaphene, and other promising new chemicals. When applications are properly timed and applied with efficient equipment, it appears that less risk exists to bees from toxaphene and from certain other new chemicals than was at first feared. Every reasonable care should of course be exercised in the use of lead arsenate, cryolite, and of all other poisonous agricultural chemicals, in order to safeguard honey bee and wild bee pollinators which are so essential to commercial fruit production.

Careless and improperly timed use of agricultural poisons will destroy bees and will tend to raise rental charges for bees which must be brought into orchard areas for fruit tree pollination. Fruit growers will find it to their advantage to safeguard honey bees and wild bee pollinators by: (1) Avoiding inclusion of arsenic in pre-blossom sprays whenever possible. (2) Applying needed DDT and similar sprays to orchards **after** blossoms have fallen. (3) Making all applications at the proper time and with proper dosages so that the fewest possible treatments will suffice. (4) Do not spray or dust orchards or berry crops with parathion, DDT, arsenicals, or other poisonous insecticides while open blossoms are present. (5) Clip undercover plants attractive to bees before poisonous chemicals are applied to orchards. This practice now is even more important where orchardists spray undercover plants to aid in mite control. (6) Notify nearby beekeepers a few days before making extensive use of parathion, arsenicals, DDT, chlordane, lindane, benzene hexachloride, or other insecticidal spray or dust materials. If desired, beekeepers then may move their bees to a safe location before large-scale

(Continued on page 384)

*Utah State Agricultural College Extension Service, Carl Frischknecht, Director Cooperative Extension Work in Agriculture and Home Economics, Utah State Agricultural College and U.S. Department of Agriculture Cooperating. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914.

From the Field of Experience

Getting Granulated Honey Out of Combs

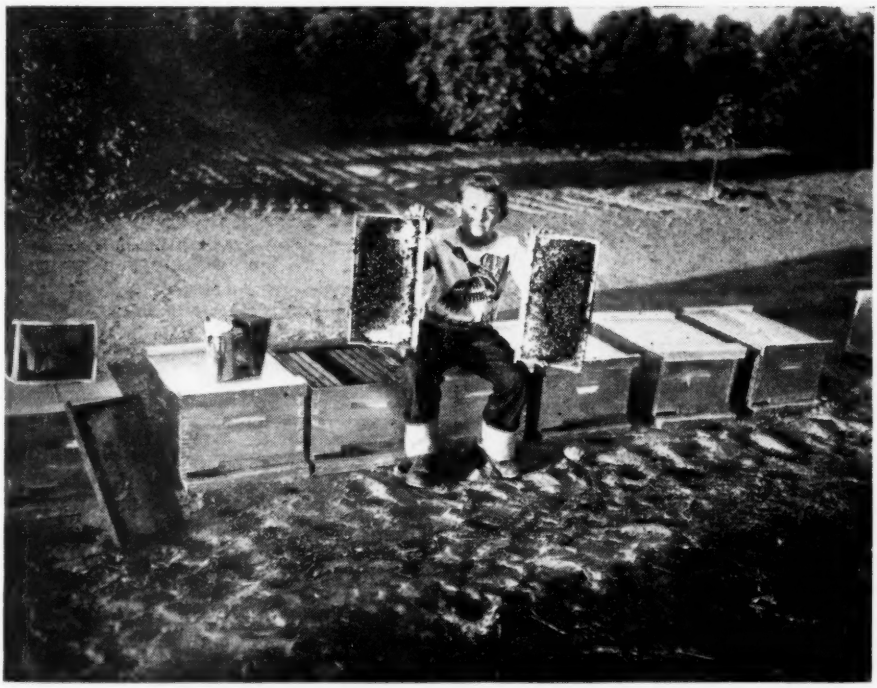
By Albert Judge, Burford, Ontario

Uncap the combs. If it is thought worthwhile, run the combs in the extractor **slowly.** Then set the frames containing combs in a square 65-pound can, the top of which has been removed and then filled with water. Put in eight frames on end at a time. Put a weight on them to keep them submerged. At the end of three hours immerse the other end of the combs. The honey is dissolved and the combs are salvaged. A lot of frames can be handled with a dozen 65's in a few days.

[The 65-pound honey can used in Canada will hold eight standard combs but the 60-pound can used in U.S.A. will hold seven, when stood on end, with the top cut out of the can. The honey water can be used as bee food—provided the honey is free from disease.—Ed.]

An Up and Coming Young Beekeeper

By Dr. J. E. Eckert, Davis, California



Don Beal in his apiary at Garden Grove, California

Don Beal, of Garden Grove, California, owns 20 colonies now, and is Secretary of the Future Farmers of his district. He has been keeping bees for three years and does all the work himself, including the rearing of queens. He started his experience by catching swarms.

It was not easy going at first because Don found that he was quite susceptible to the poison of bees, but by persistence he became immune to the severe after effects and now handles them with comparative safety and with much pleasure.

Don is only 15 years old and plans to have 150 colonies by the time he graduates from high school. He then intends to enter the University of California and study agriculture and beekeeping at the College of Agriculture at Davis.

Don apparently prefers Caucasian bees.

Asked and Answered

Government Support on Honey

Question: Can you tell me if there is to be a government support price at 60 percent of parity or more, or is the export subsidy or similar arrangement all that can be expected? (Question received May 1, 1950).—Ray C. Wilcox, N. Y.

Answer: The Bill requiring the Department of Agriculture to support honey at a price of not less than 60 percent of parity became law some months ago. The question then came up—what shall the support be—60, 75, or 90 percent? A meeting was held in Washington in January and a number of the industry were asked to attend. So far as we know at the present moment, no one knows whether it is going to be 60 or 75 percent. We doubt very seriously if it will be set at 90 percent. We are told now that the Department of Agriculture has run out of funds, or to be more exact, the CCC, which we believe does the financing, lacks funds to put over not only the honey support but also several other items that Congress voted. We are informed that the matter is at a standstill until Congress votes sufficient funds. —Alan Root.

Processing Extracted Honey for the Market

Question: How should I prepare honey in small lots for the local trade and for grocers?—J. A. Black, Pa.

Answer: As a rule, the backlot beekeeper who sells honey in small quantities locally processes honey just after it comes from the extractor. If the weather is warm or hot, the honey, as it comes from the extractor, can be strained into a tank through two thicknesses of fine cheesecloth which are held in place over the top of the tank by means of a metal holder. Some tie the cheesecloth onto the top of the tank by means of a stout cord. But if the weather is cool, the honey from the extractor is run into 60-pound honey cans which are heated in a boiler of hot water over a gas plate. The water should be brought to a temperature not hotter than the hand can bear and the cans left in the water for about an hour. If the honey has granulated, more than an hour may be necessary for liquefying it. If the honey is put up in glass for grocery stores it should be brought to a temperature of 160 degrees F. and left at that temperature for 20 minutes, then put into jars while hot. This retards granulation and also destroys any yeasts that may be in the honey to cause fermentation. The main thing in processing honey is to thoroughly liquefy it and remove all foreign matter so that the honey will be clear.

Food Differences of a Worker and a Queen

Question: What is the difference, if any, in the chemical composition of the royal jelly fed to the larva that develops into a queen bee and that which develops into a worker?—Bena Faye Bonds, Ala.

Answer: At one time it was thought that royal jelly was produced in the stomach of the worker bee, and then regurgitated when needed. Some years ago it was found that royal jelly is produced in the pharyngeal glands of the head of the worker bee. Some scientists are of the opinion that it is the quantity of royal jelly fed to a worker larva destined to become a queen bee that makes the difference between a queen bee and a worker bee. Both come from the same egg. Others are of the opinion that there is a difference in the quality of royal jelly fed to a queen larva and that fed to a worker larva. We are told that a worker larva receives this royal food for two and one-half days of its five-day development, then a coarser food during the remaining two and one-half days, whereas the larva which results in a queen bee receives the royal food during the entire five days of larval development. It is probable that more work will have to be done to find an answer to the question you raise.

Beeswax Coating for Boats

Question: I have a friend here who races small boats. He wants to try waxing them with beeswax and wants to know if there is any way to thin hot wax so he can get a thin even coat.—Harry Bell, Minn.

Answer: While we have had no experience in the use of wax for boats, there are two types of polishes that might be used. It would be very interesting to try one type on part of a boat and the other on the other part to see which is the more durable under water. So far as we know, there is no information available. The first type of polish

we would recommend is beeswax and turpentine. The turpentine must be carefully warmed in a can surrounded by hot water, then add the beeswax. The exact proportions are not important—the more beeswax added, of course, the thicker the paste and the harder to rub down. We suggest trying at first about 25 percent as much beeswax by bulk as turpentine, then if the paste is too heavy you can add more turpentine. On the other hand, if it is not heavy enough, add more beeswax. Beeswax and turpentine are dangerous near fire. A somewhat harder polish and one that rubs out more quickly is made by adding beeswax to warm naptha. Of course, you have to be all the more careful when using naptha. To make it quite safe, the mixing ought to be done out of doors. If the water surrounding the naptha is very hot, the receptacle can be taken away from the fire altogether. In fact, it is better to heat the water nearly to the boiling point, take it outdoors and set the container with the naptha into it, then add the beeswax. Try about the same proportion. We would guess the naptha polish would be easier to apply but that the turpentine would be more durable under water. This is pretty much of a guess on our part, however.—H. H. Root.

Double Brood Chambers for Comb Honey

Question: This season I plan to produce only section honey. All of my colonies are strong enough to do so. Do you think a good crop could be obtained by leaving both brood chambers with each colony and simply adding the section supers as needed?—Morris E. Richardson, Md.

Answer: Producing section comb honey over double brood chamber hives has been tried out to some extent and has been found satisfactory. As a matter of fact, we have tried this in our apiaries. The hives that produced the most section comb honey last year were those that contained bees in double brood chambers. There are a few tricks to this method of management. At the beginning of the honey flow, when swarming is likely to occur, it is well to put on two section comb honey supers, one between the two brood chambers and the other on top. This procedure tends to relieve congestion in the double brood chamber hive. Furthermore, it gives the bees a chance to enter the section supers if they care to do so. In producing section comb honey we usually examine the brood chambers each week. If we find cells we destroy them. As soon as swarming is over we put the upper brood chamber back where it belongs, then place the section comb honey supers on top and add more as needed. In some instances, when swarming is bad the double brood chambers can be reversed—that is, the one that is on the bottom board can be raised up on top of the second brood chamber. This usually controls swarming. In fact, there are a number of things that can be done in this method of management. Obviously, there must be populous colonies and a heavy honey flow for best results in producing section comb honey.

Utilizing Extra Combs of Honey

Question: Last fall when taking honey from my bees there were three or four supers that were partly filled and were not capped. I left these supers on the brood chambers for extra food supply. Please tell me whether or not it will be necessary for me to remove these supers this spring and tear out the old foundation and replace with new foundation.—L. E. Foley, Virginia.

Answer: Regarding the extra supers on your hives that are partly filled with honey, it seems possible that the bees may need this extra honey for food this coming spring before the major flow starts in your locality. If you wish to enlarge the size of your apiary, you could easily use up the extra combs of honey at the time you divide your colonies in the spring. In any event, it would hardly seem necessary for you to cut out the combs of honey in the spring in order to replace with full sheets of foundation. Some of the combs of honey may be somewhat granulated at the present time, but if given to the bees when warm weather comes in the spring this honey is likely to become liquid and hence available as bee food.

Feeding Sulfathiazole

Question: What is the correct amount of sulfa drug to feed my bees? What is the amount or grains per gallon of syrup? I do not have any disease so far.—C. J. Cain, Virginia.

Answer: To feed sulfathiazole to a colony of bees, mix a one-half gram tablet in a cup of hot water until it is dissolved, then stir it in with one gallon of sugar syrup made of equal parts of cane sugar and hot water, and feed in a bee feeder.

Editorials

Another Possible Use for Royal Jelly It has been suggested that there may be a possibility of using royal jelly as one of the ingredients of a food for undernourished children.

According to G. F. Townsend of the Ontario Agricultural College at Guelph, Canada, who has done some work on the chemical nature of royal jelly, it consists of approximately 50 percent water, 25 percent sugars — glucose and fructose — 18 percent proteins, 6 percent fat, and 1 percent other materials.

On a dry weight basis the protein part of royal jelly is approximately 36 percent and, as Mr. Townsend says, this is very high and might prove suitable for the purpose mentioned, provided it had all of the essential animo acids present in sufficient quantity.

Mr. Townsend also states that royal jelly is very high in vitamin content, especially the B vitamins. And since it contains a very high concentration of sugars so essential in baby food, it could quite easily prove satisfactory for that purpose.

If and when the demand for royal jelly to be used as a baby food should materialize, the production or availability of royal jelly would likely be limited unless a suitable technique for producing it in quantity and storing it by refrigeration until used, could be worked out.

Obviously, it would be impossible to produce royal jelly during winter months in the North. We received a request for royal jelly here in Medina last November and referred the party to a queen breeder in Southern Florida.

Royal jelly, a thick, creamy material, believed to be a secretion of the pharyngeal head glands of nurse bees, and fed to bee and queen larvae, is one of the products of the hive and there may be a demand for it as a baby food in the future.

* * * * *

One Slant on Honey Advertising We recently met a man in the advertising field who maintains that the majority of people buy foods that they enjoy eating rather than those that are good for them. In other words, when the majority of people sit down to a good meal, they will eat and sometimes overeat food that they enjoy eating and which perhaps is not good for them.

This man said further that in advertising we should not dwell too much on the energy-producing properties of honey but rather on the popularity of honey as a food and its goodness.

We have assumed that inasmuch as honey is different from most other sweets in that it is a carbohydrate and an energy-giving food, also is predigested and goes directly into the blood stream, these virtues, if they may be called such, should be stressed in advertising.

On the other hand, if the majority of people pay very little attention to such an appeal and eat foods which appeal to them, regardless of food value, the idea of playing up the energy properties of honey would then be of no avail.

It would appear that quite a percentage of our people do try to select foods which are good for them. It would be interesting to take a poll of 1000 average citizens to learn how many eat foods that appeal to them, paying little if any attention to the benefits derived from the foods, and how many keep in mind foods that supply needed energy and are beneficial to health.

* * * * *

Beekeeping Certificates References have been made recently in bee journals of the British Isles to a certificate of distinction, the highest honor bestowed by the British Association to those who are able to pass a rather rigid examination on beekeeping and to demonstrate a certain standard of proficiency in the art of handling bees.

We commend this idea and hope that it may be introduced and practiced throughout the beekeeping associations of our country. Such a practice, if supervised by competent beekeeping authorities, should tend to minimize the possibility of disseminating misinformation on bees and beekeeping and to encourage sound beekeeping practices.

Beekeeping certificates awarded by state or provincial beekeepers' associations should, we feel, be a worthy project for the future of our industry.

More Bees Needed for Pollination We note from an article appearing in the April 1950 issue of Eastern Fruit Grower that 10,000 colonies of bees is the estimated number used for pollination in Virginia orchards during 1949. The article goes on to say that few commercial fruit growers have enough time to devote to beekeeping in order to make it profitable, and consequently bees are likely to be neglected. However, if proper attention is given bees at the right time, fruit growing and beekeeping can be successfully combined.

Most of the fruit growers rent colonies of bees for pollination purposes. In some instances they have difficulty in securing the right type of colonies—hives filled with bees of the right age.

It seems obvious that as time goes on, more and more bees will be used for pollinating farm crops.

* * * * *

California Beekeepers Buying More Bees In the North, East, West, and South Department for May 1950, reference was made to the unusual interest in bees for pollination, especially alfalfa fields, for the coming season. It seems that alfalfa seed growers are becoming more conscious of the value and importance of having hives of bees near their fields while in bloom, for maximum seed yield.

It would appear that there may not be enough hives of bees to supply the demand, in the event that all or a large portion of the alfalfa growers become sold on the dependence of alfalfa on bees for maximum seed yield.

As brought out in a recent editorial in May Gleanings, we may be entering what might be called the Pollination Era of Beekeeping, and as time goes on, the commercial beekeepers who make a practice of catering to the seed and fruit growers may derive the major portion of their income from bees supplied for pollination. Time will tell.

* * * * *

Honey Price Support When the Agricultural Act of 1949 was passed, honey was included among those items to be supported in price at 60 to 90 percent of parity. Later a group of members of the industry, mainly packers and producers, were invited to Washington to suggest the price at which honey should be supported. From the outset it seemed unlikely that the level would be more than 60 percent with a bare possibility that it might be as high as 75 percent. This might mean a support price of from 9 to 12 cents a pound for all grades of honey.

However, before the Department of Agriculture could start the actual support of honey, funds provided by Congress had been exhausted. Several items in addition to honey were held up. At the moment the Commodity Credit Corporation will make no further program announcement until Congress has acted upon their request for additional borrowing power. The House has approved the bill for additional funds. The matter is now in the hands of the Senate. An early decision is hoped for.

In the meantime the Government is subsidizing the export of honey to foreign countries to the extent of 4½ cents a pound, or for the use of honey in new industrial channels. This subsidy has the effect of again allowing honey to be exported in quantity.

* * * * *

International Mite Conference Held at Basil, Switzerland, February 24, 1950 At the suggestion of Dr. Otto Morgenthaler, Head of the Bee Research Laboratory at Liebefeld-Bern, Switzerland, a conference on the mite disease, which has been held for almost 30 years by Switzerland, Baden, and Alsace, was brought together for the first time since the war. The importance of the mite disease and the unfortunate situation in all countries was noted. A plea was made for the exchange of information among all parties to the greatest possible degree. The leading apicultural scientists of the three countries participated.

Dr. Lehmann, President of the German-Swiss Bee Culture Association, opened the conference with a strong plea for both moral and material support from all beekeepers and their organizations. He mentioned the great assistance given by Morgenthaler, Kaiser, Baldensperger, and others, and the tireless experiments and investigations going on in their laboratories, and of the great importance of disseminating

the latest scientific publications and reports to the beekeepers to help in combating the destructive disease.

Mention was made of the heavy infestation over the entire Alsatian region in 1946, and the rather discouraging report that the situation has scarcely bettered itself. It was stressed that only continued research and improvements in the treatments already established, and the use of latest remedies tested as to their efficacy, can control the infestation. Also of great importance is the cooperation and assistance of the beekeepers themselves, to the end that all diseased stock be cleaned up. Great praise was given to the local government officials, apiary inspectors, and others for their valuable help, as well as the apicultural associations throughout the regions in question.

Because of the encouraging results of the Congresses held last year at Amsterdam, Holland, and Biarritz, France, the group interested in holding the mite disease conference urges the continuation of the meetings as a means of keeping beekeepers abreast with the latest developments in the war against infestation by the parasite. Although the gravity of the situation was stressed, it was indicated that the disease could be controlled.

Because of the seriousness of mite disease it would appear necessary to continue the present embargo on bees shipped from Europe to this country.

* * * * *

Hybrid Bees It is common knowledge, among beekeepers, at least, that experimental work is now under way at some of the bee culture field stations to develop hybrid strains of bees which are superior in honey production and possess a high degree of resistance to bee diseases.

Hybrid breeding is done at the North Central States Bee Culture Laboratory maintained by the U. S. Department of Agriculture at the University of Wisconsin at Madison. This work is done under the direction of Dr. C. L. Farrar, apiculturist.

Inbred lines are selected for high production and disease resistance. Highly inbred lines, says Dr. Farrar, will not build up into populous colonies. The bees lack vigor. Half of the eggs the queen lays do not hatch. These inbred colonies are strengthened with bees from ordinary colonies. They are then crossed to obtain the hybrid vigor. Hybrid crosses from three or four of the inbred lines seem promising but more testing and selecting has to be done before hybrids are available generally.

Some years ago, when the late Mel Pritchard, the noted queen breeder, was still alive and active, we conducted an experiment to determine the value of a cross between the two races, Italians and Caucasians, to compare these queens with supposedly pure Italians and Caucasians. We sent to a Caucasian breeder in the South for a tested Caucasian queen. Mr. Pritchard grafted from this queen and the virgins were allowed to mate with Italian drones in our queen-rearing yard. These first cross queens were very large, vigorous, and prolific. We introduced 35 of these queens to colonies in a yard somewhat isolated from the other yards. In this yard we also had 25 Italian colonies and 25 Caucasian colonies.

During the following season we had an opportunity to make some comparisons. These hybrid queens were much more prolific than either the Italians or Caucasians. Colonies headed by these hybrid queens stored a larger crop of honey than those headed by Caucasian and Italian queens. Furthermore, the hybrid colonies were quite gentle.

One characteristic of these hybrid colonies which we did not like was that an unusual number of drones were produced. As a matter of fact, the bees would change the midrib or septum of some combs containing worker cells in order to build drone cells for the production of drones.

We have since wondered what would happen if virgin queens from an Italian queen were mated with Caucasian drones, and whether or not such a cross would eliminate the undesirable characteristic.

It seems to be a fact that if the first cross can be maintained each season instead of permitting miscellaneous matings during subsequent years, the vigor as well as other desirable characteristics of a first cross between two races can be maintained. If this first cross strain can be maintained, the bees are not likely to deteriorate, nor become vicious and difficult to handle.

From North, East, West and South

SOUTHERN CALIFORNIA, May 3

Weather: Beekeepers in Southern California aren't very happy over the weather at the present time. There were a few warm days when the bees were really able to work but most of April has been rather cool with almost cold nights. On the 8th and 9th of the month there was some rain—anywhere from one half to one inch. Then later in the month there were a few sprinkles. Today there was enough rain to wet the top of the ground.

Condition of Plants: The sages—both black and white — seemed to make a fair growth some time ago but because of the general dryness in recent weeks, very little nectar is being secreted. Probably little honey will be produced from the sages in most of the localities. Even though the buckwheat now appears to be in fairly good condition, it is too early to predict what honey may be expected from that source. More rain would of course be a big help to the buckwheat. The oranges are in full bloom and the blossoms have more nectar than usual. When a bee hits the windshield of one's car a big spot of honey is left on it. Men working in the groves report that equipment becomes sticky from the nectar in the blossoms. The trees are almost white with a heavier bloom than for many years. It is certainly a beautiful sight, especially where the yellow oranges are still not picked. Day and night the air is laden with the delightful perfume from the many blossoms.

Market: The honey market continues steady but sales are light. Producers are beginning to talk in terms of the new crop and are hoping and expecting that the market will remain steady. They are also hoping that a good price will be offered for wholesale lots of honey. The retail prices on the best grades in the stores remain high. Why doesn't the beekeeper get a greater share of those high prices?

Miscellaneous: The oranges are in full bloom but the bees aren't able to work much now because of the cool weather. For five or six days it was warm and sunny and the bees poured in the nectar. But suddenly the weather changed and now things don't look so bright. Nearer the coast very little orange honey has been stored. It is certainly aggravating to the beekeepers to have cool weather when the oranges are in full bloom — especially when there is such an abundance of nectar going to waste.

Those beekeepers who have a contract to place their bees in alfalfa fields feel fortunate. The price paid to Southern California apiarists is fairly good. They are feeling much more encouraged over that source of income than from this year's honey crop.

With the report that the U. S. Department of Agriculture is going to start a program of expansion in the disposal of honey both in this and other countries, producers should be happy. It would seem as if conditions are definitely looking much brighter for the beekeepers.—L. L. Andrews, Corona, California.

NORTHERN CALIFORNIA, May 1

Weather: If we could do anything about it, we would like to do something today. Yesterday was windy with increasing cloudiness while today is cold and misty with not enough rain to amount to anything. Locally, the weather chart indicates that we are some 3.5 inches below the normal of 16 inches. Only 0.79 inches fell during the past month—just enough to get the alfalfa and grain started. Some farmers are pre-irrigating before planting as an assurance of a suitable seed bed. Snow and rain storms in the Sierras have been reported by beekeepers hauling package bees from California to Montana and Canadian points.

Condition of Colonies: Many of our colonies are short of stores even though they were left heavy last fall. Spring was late and fruit bloom too short to give the bees good opportunity to replenish their stores.

Some colonies favorably located produced a super of surplus, but such instances were much too uncommon for the best interests of a majority of the colonies. Both pollen and nectar have been rather short in the northern counties this spring, causing many colonies to build up very slowly. There was a heavy loss of adult bees in many northern apiaries, the cause being placed quite generally on a lack of pollen last fall, resulting in a high proportion of the populations of over-wintered colonies being too old for best spring development. It takes adequate stores of pollen and honey, with young vigorous queens in the fall, to set the stage for normally strong colonies in the spring. Omit any one of these three factors and the colony will be weaker than normal at the close of the winter period.

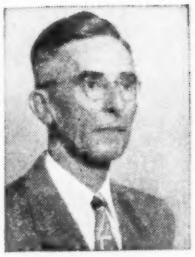
Plant Conditions: Fiddle-neck **(Phacelia tanacetifolia)** and mustard have been rather abundant this spring and bees have made more than a living under favorable weather conditions. Filaree and burr clover have also added considerable to the spring build-up of the colonies. Star thistle plants are thick where they have not been eradicated by the application of 2,-4-D. Beekeepers speak of yellow star thistle as a beneficent weed in that it provides a good source of pollen and surplus honey. Its gradual eradication with 2,4-D is changing the value of many apiary locations in Northern California. With more rain this month, natural plants should be in average condition by the time they should be in bloom. Orchardists plow under the cover crops earlier in dry seasons than in wet and in some orchard areas colonies may go from a feast to a famine in a matter of days.

The Honey Market: Still no word in regard to the "support" program for honey. However, on the strength of the "diversion" program announced last month, or for some other reason, honey has been moving at increased prices within the past few weeks. Prices for table honey in wholesale quantities have varied from nine cents to eleven cents in Northern California. There are not too many lots of honey in Northern California to be moved out of the hands of the producers. The few that are left are still being held for the influence of the support program. One buyer reported that he raised his price three times to one producer who finally decided to hold until the terms of the support program were announced. It is desirable for honey to move through the normal channels of trade. Honey in 5-pound containers is being used as a leader in some of the chain stores and is being sold cheaper than the present wholesale prices for good table honey warrant. A Sugar-Crisp Puffed Wheat has been successfully introduced as a breakfast cereal and this product is advertised as containing honey. It closely resembles a product made in California some years ago and is put up in cellophane bags. Even a small percentage of honey in any food product which is manufactured on a large scale will serve as an important outlet for honey. Even though the product is called "Sugar-Crisp", it contains honey and deserves the patronage of beekeepers and their friends. And besides, it is **good** even without cream.

Miscellaneous: The package bee industry of California literally went on wheels, and rubber wheels at that, this spring. The high express rates and the withdrawal of important trains from the express service, both in the United States and in Canada, has forced the issue on the buyer and producer. Reports indicate that package bees can be delivered in less time and in better condition by truck than by train. Many buyers will continue to improve their facilities for moving packages in this manner. Most trucks have two drivers and trips of 40 to 72 hours are made with continuous driving or with only short stops to refresh the drivers. Some trucks are equipped with heaters to keep the bees warm when they encounter snow storms. Water sprays are used to lower the temperature inside the trucks during warm weather.

In Memoriam: The many friends of M. S. Stone of the Superior Honey Company were grieved to learn of his sudden passing while on a much deserved vacation with Mrs. Stone in Santiago, Chile. He will be sorely missed at our conventions and committee meetings because he was a friend of the beekeeping industry and a staunch supporter of The American Honey Institute.—J. E. Eckert, Davis, California.

TEXAS, May 2



Weather: Warm temperature and prolonged drouth which persisted over most of Texas since the beginning of the year extended to the middle of April. The latter half of April brought rainfall in fair abundance and at frequent intervals over most sections of the state, with the temperature relatively cool and skies mostly cloudy. Although farm operators were somewhat delayed, the drouth definitely has been broken and grass and wild flowers are abundant in pastures, wastelands, and roadsides.

Bees, Plants, and Honey Crops: Bees generally are in excellent condition with swarming reported in most sections. Frequently short periods of adverse weather kept the bees in the hives which resulted in congested brood nests and consequently many colonies swarmed in spite of the usual practice of swarm control. Earlier reports on the condition of plants and prospects for a honey crop are now definitely more optimistic. In the Lower Rio Grande Valley the generally erratic citrus bloom reached a climax with the result that the best orchards yielded a heavy flow for a few days. Some beekeepers obtained a small crop from citrus and wild flowers. In some localities of Southwest Texas where guajillo bloomed normally, beekeepers obtained up to 60 pounds of surplus. Throughout most of East Texas a good flow was reported from youpon. Scale colonies in the A & M College apiaries showed gains of from 43 to 50 pounds from this source. Numerous wild flowers are now providing sufficient nectar to enable colonies to draw out comb foundation. In South Texas Hubam clover is in bloom and in Central and North Texas where the fields were seeded late the clover is in excellent growing condition. Volunteer and ungrazed vetch has been blooming for some time. Earlier grazed fields of vetch for seed production are rapidly approaching the blooming period and relatively little damage from insect pests is reported thus far. Horsemint which abounds over a good portion of Texas is in good condition and a flow is expected in due time.

Market: Movement of honey on the retail market remains slow. Early spring white honey and comb are sought by packers and are expected shortly on the retail market.

Miscellaneous: Queen breeders report a good demand for queen bees up to the present time. The early season was generally favorable for queen production. Later cool and cloudy weather with frequent rainfall which kept the bees in the hives resulted in considerable loss of virgins. Bee paralysis is fairly prevalent in some sections of the state. While outright loss of colonies is relatively light and affected colonies usually recover after an indefinite period, this disease is a serious problem in that colonies which recover generally remain unproductive for the year. In addition to the common virus form of paralysis this disease also occurs in a bacterial form with symptoms closely resembling the former. For some weeks migration of apiaries has been in progress. Most colonies are moved within this state largely to vetch and sweet clover fields. Legume seed growers, County Agricultural Agents, and the Soil Conservation Service are vitally interested in the pollination of legumes for increased seed production. — A. H. Alex, College Station, Texas.

OKLAHOMA, May 2

Maybe You Didn't Know That: As the honey bee is being used more and more to increase our agriculture prosperity, ways are being determined in which bees can bring the greatest returns to all.

One case brought to attention the past year was that of bees being placed in red clover fields for a share of the seed yield. Most agreements called for an equal division of all seed in excess of one bushel per acre. The national average yield of red clover is .8 of a bushel per acre. Under this plan the grower does not pay for the pollination service unless he is receiving a benefit. The beekeeper is

XUM

paid for the value his bees have been to the grower.

Using similar plans the keeper of bees will have opportunity for a profitable return from his bees in either honey, portion of a crop, or cash. And the grower has the assurance he will not pay more for a pollination service than he receives in increased yields from his crops.

The Farmer and the Beekeeper: Where vetch and other legumes are grown for a seed crop, the seed yield is very important. The seed yield can be doubled by bees. While vetch doesn't necessarily have to be cross-fertilized (taking pollen from one plant to another), it helps the seed yield considerably. Then too, most legumes must be pollinated by bees or other insects to produce seeds.

The farmer really needs two hives per acre. However, there usually aren't enough bees. By all means, he should try to get at least one hive of bees to each acre. Most county agents will spend a lot of their time during spring serving as a "Bee Clearing House" for the farmer and beemen. I still say bees rank first for pollinating legumes, second for honey making, and third for beeswax production.

You ask the farmer how to get bees into his area. He could say the beekeeper gives me 100 pounds per location. However, sometimes here of late the shoe is on the other foot. The farmer pays the beeman $5.00 per hive to come in. Most beekeepers would like to have the farmer who wants bees for legume pollination tell him the number of acres he will have for seed, kind of plants, kind of soil, and condition of the stand. The beekeeper can easily pick out the location, not too close to the house or road. There should be water within a few yards; a little shade will help. This place should be well drained and fenced so the bees and stock won't get mixed up.

The Busy Little Bee: Honey bees are more valuable to the producers of fruit, seed, and vegetables than they are to the beekeeper himself. As you know, the sex factor is just as important in plant life as it is in animal life. Before fruit, seed, or vegetables can be produced each female flower must be fertilized.

Nature does not favor self-fertilization, therefore has developed several means of preventing it. One of the best known examples is where the male and female flowers are borne on two different parts of the same plant. In most cases, even though both male and female elements are produced in the same flower they are known to be self-sterile. Most of our fruit and seed bearing plants belong to this group.

Hairy vetch, clover, and alfalfa are the most important of the agricultural forage plants and they are largely if not entirely self-sterile. Before these plants can produce seed, the male element (pollen) of one plant must be transferred to the female element (pistil) of another plant. This process is known as cross-pollination. Bees are the most efficient agents in effecting cross-pollination. They also secure from the flowers all of the food—nectar and pollen — they require for life and reproduction.

It is important to farmers to have bees where they are growing legumes for seed production. Tests have shown that an increase will be up to 50 percent or more.

Of all the insects that play a part in the marriage ceremony of the flowers, the busy little bee is the most important because it can be controlled by man and can be moved to places where its services are required. — V. K. McMasters, Duncan, Oklahoma.

MISSOURI, May 1

Weather: The winter of 1949-50 was mild and open. There was no snow cover at any time, with the exception of the extreme northern part of the state.

Considerable alternate freezing and thawing occurred through January and February, resulting in killing a lot of legumes. Some sweet clover fields are out of the picture as a result of this. Here and there a field survived. There is a good stand of white clover.

March and April have been cold. Locally the temperature slid down to 18 above in mid-April, killing most of the peach throughout the state, as most trees were in bloom at that time.

Bee Conditions: There was practically no winter loss. There could be some spring loss if cool weather should continue very much longer. Rainfall has been light this spring.

In the western part of the state we are four inches below normal at this time. On April 28, 29, and 30 we had over two inches of rainfall. With warm weather we can look for a good flow from dandelion.

Miscellaneous: In a spring such as we have experienced this year, several things stand out as important factors in the proper and successful management of bees. Most beekeepers realize, and know that they are: **good queens, plenty of stores (pollen and honey), and at least a double brood-chamber hive.**

The use of the double brood chamber has meant bigger honey crops. At this time we have colonies that have from 10 to 12 frames of brood. It would not have been possible except for the double brood chamber supplying an abundance of stores—for what the bees have gathered from outside sources so far has not amounted to a particle—and, of course, it takes a good queen to do the job.

For several years after we started in beekeeping—which, by the way, was 30 years ago—we kept bees in single brood chambers. Swarming and wintering were big problems. When we started to use the double brood chamber the wintering problem was licked, and swarming became a minor problem.

Once in a while we talk to beekeepers who still operate in single brood chambers. We know from experience that they would gain by operating their bees in double brood chamber hives, at least in Missouri. —Carl Kalthoff, Lexington, Mo.

SOUTH CAROLINA, April 24

Weather: In January and February it was unusually warm and a number of our early plants were yielding pollen. The queens were laying heavily. In March we had frost and ice which killed most of the bloom. Today is cool and colonies that built up in January and February dwindled a great deal during March and April. Some of our heaviest honey-bearing trees have been bitten by frost in some locations and it is doubtful if these plants will yield this year. In a number of locations the bees are still on the verge of starving. A number of swarms have been reported in different sections of the state but in most cases they were starvation swarms.

Prospects: Today is a beautiful spring day and if it will stay like this I believe the bees will gather a good crop of spring honey yet. Beekeepers are asking what to do as they are afraid that our spring honey flow will be short as it was last spring because of late frosts.

Miscellaneous: The County meetings we are holding are well attended, showing that the beekeepers have not lost interest. The heavy schedule of poisoning for boll weevil has the beekeepers worried. So far the new insecticides they are using have not been quite so damaging to bees as the old arsenic poison, but in a number of places the new insecticides have killed off so many of our beneficial insects that the whole load of pollenization falls on the honey bees. I am afraid that in some localities of this state we are going to be short on pollenization insects and I am getting the beekeepers to take better care of their bees than they ever have because we need bees for pollinating a number of crops that are comparatively new in this section. —E. S. Prevost, Clemson, So. Car.

SOUTHERN ALABAMA, May 8

The weather for the early spring of 1950 was most singular in that we had spring in January and February and a mixture of spring and winter in March and April. The weather bureau reports no frost for Mobile and vicinity for January, which is quite a record. (We are situated 50 miles north of Mobile.) May has started in dry which is normal for this part of the country. The humidity is low because of drying winds since the last rains.

Honey Flora and Market: Spring wild flowers have bloomed as usual but bees have been slower in building up because of the backward spring. At this time our main honey plant, gallberry, is in bloom. It has all the appearances of giving us a long flow. All honey seems to have gone from the market and what one sees in the local stores has been shipped in from other points. There are no prices given in the May first Alabama Farmers' Bulletin.

XUM

Miscellaneous: This is the season of swarming although at this date I have seen only two swarms. It may be interesting to some beekeepers that bees swarm here regardless of the number of hive bodies or the size used.

One can look for queen cells as soon as he can see the first spatter of new wax on the combs. Not all colonies swarm but it is rare indeed to see a colony that has built up to gathering strength that has made no effort to swarm. Among beekeepers who have a few colonies you often hear it said: "How can I keep the worms out of my 'gums'?" To those who think there is nothing to beekeeping but to catch a few swarms and to "rob", it has become a failure largely because their colonies cast a swarm, then another and another until the working force is so diminished that the wax moth takes over and another colony is lost. If the keeper has taken the first swarm he has that, but afterswarms usually do not come out at a time when conditions are such that they can ever build to colony strength without it.

A few years ago a would-be beekeeper bought six colonies in box hives. He then came to me for some information regarding them. He complained that no one would tell him anything. I told him he could get some good literature and read up on the subject. This didn't suit him and he insisted that I tell him something about management. I said, "Well, there is one thing to bear in mind and that is that if you intend to make a crop of honey"— at this point he interrupted — "I know, you get your crop of honey and your swarm, too." I meant to tell him he couldn't make a good crop and much increase at the same time. He would have to sacrifice one at the expense of the other.

Well, he transferred his colonies to modern hives and they very likely swarmed the same season. At any rate, he lost one-half of them the first winter. The following winter he lost all except one of those left, and someone made off with that, which ended his enterprise.

Some of our World War II veterans who are interested in beekeeping may have similar experiences.—H. G. Miller, Vinegar Bend, Alabama.

ONTARIO, May 10

Weather: My notes of the past several months have made mention of abnormal weather conditions we have been experiencing. Spring weather in January; intense cold in March; and a very unspringlike April. The same abnormal trend is continuing in May to date. Temperatures are below normal, and on several nights frosts severe enough to form ice have occurred. Soft maple bloom came and went, with only a very few hours warm and sunny enough for the bees to take advantage of it. Elms and willows are now in bloom, and these provide a source of much-needed pollen, but again the weather is unsuitable for bee activity. A few dandelions are beginning to show in sheltered places, and we are hoping for an early change in weather conditions as the dandelions are a valuable source of both nectar and pollen, and help boost up the colonies for the main honey flow.

From conversations I have had with beekeepers the condition of colonies could best be described as spotty. Some report colonies in fair to good condition. On the other hand there are a large number of weak colonies reported. In sections where honeydew was prevalent last year, dysentery has weakened large numbers of colonies and the cold late spring has caused further dwindling.

Honey Plants: It is still too early to ascertain the condition of honey plants. Considerable heaving of alfalfa took place during the winter when the ground was saturated with water and without snow protection. Growth has been slow, and it is doubtful if there will be more than a fair crop of legumes this year. New seedings were damaged by drouth in 1949.

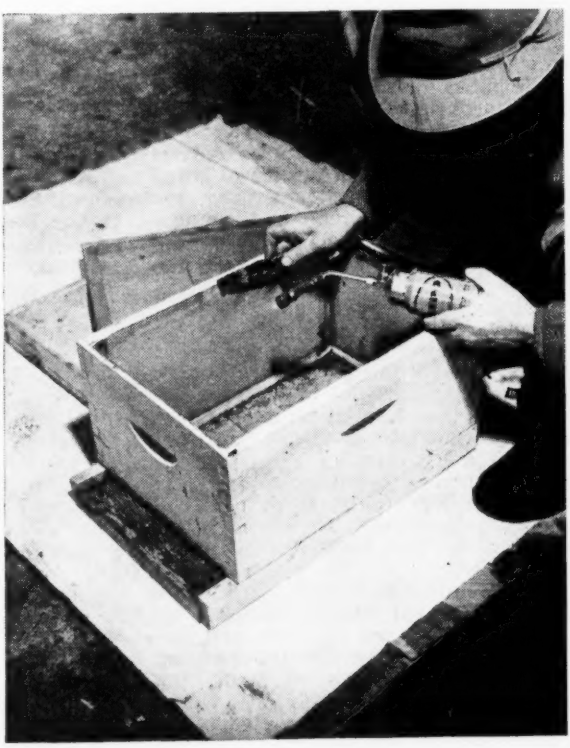
Honey sales continue to be draggy, and I believe I know part of the reason. For several years people bought and consumed great quantities of honey because sugar and products made with it were scarce. The result was that they became fed up with honey, the same as any

person will get tired of any food if they eat is continuously. When sugar, jams, etc., again became plentiful, people just turned away from honey. Many of my individual customers bought only 25 to 50 percent of their usual amount last year, explaining that they had honey on hand from the previous year. Others bought none at all. This is probably a temporary condition, and a crop of good quality honey this year would likely reawaken the desire for honey.

Miscellaneous: Spring meetings and field days will soon be in full swing again. These have become a real institution in the social life of beekeepers in Ontario. These usually take the form of outdoor gatherings at apiaries, or honey houses, or picnic resorts, with addresses by prominent men in the industry, and conclude with a picnic supper. Everyone has a good time and goes home with new and practical ideas that can be used in day to day work in the bee yards.

The general provincial meeting will be held at Ontario Agricultural College at Guelph, on June 16th. Beekeepers will have an opportunity to inspect the new honey house recently completed as an adjunct to the Apiculture Department. Could we not have some of our American friends from neighboring states join our Ontario beekeepers on that date?—Allan T. Brown, Peterborough, Ont.

New Aid for Beekeepers



Flame sterilization of hives and supers is the only way to kill foulbrood spores and wax moth larvae. Here an Indiana beekeeper is scraping from the hive walls the propolis in which larvae and spores are so often found. He will then go over all the inner surface of the hive with the 2200-degree flame of the new "Prepo" hand torch.

This new, handy tool saves time, too, because it lights quickly without pumping, priming, or preheating. When "Prepo" fuel is exhausted, the empty can is thrown away and a new, full can is attached to the torch.—Photo sent in by Pressure Products Corporation, Selvage & Lee, public relations counsel, Field Bldg., Chicago 3, Ill.

A Talk to Beginners

By M. J. Deyell

Always Learning Something

It is remarkable how little some of us actually know about bees and their behavior and yet manage to secure some surplus honey when conditions are favorable for a crop.

In handling bees most of us work by rote, more or less. We have been taught or we have read in bee books that we should do certain things in the apiary at certain seasons of the year. When conditions are normal and no adverse emergencies arise, we may get some surplus honey. However, each season is likely to be different from the preceding one with respect to weather conditions and consequently we must be ready to meet any emergency which is humanly possible to meet.

If we would spend a little more time studying bees, how they behave and why, and would then try to work with them, making it possible for them to do their best work instead of attempting to make the bees do things they will not and cannot do, we would get along better and, incidentally, secure larger crops of honey.

We must always be in a frame of mind to observe and learn from the bees. If we would take some of our problems to the bees to be solved instead of asking the advice of some so-called expert in beekeeping, we might be farther ahead in the end.

Sometimes a beginner who is mystified concerning the proper course to pursue asks the advice of an experienced beekeeper, and in most instances this experienced man is willing to give the beginner what seems to be the correct answer to his question. This beginner may approach another expert on bees and may get an altogether different answer to his question. So what is the bewildered beginner to do? He may learn eventually from the trial and error method. This is one way to learn, but the tuition comes rather high.

In attempting to clear up some questions that mystify beginners, let us get right down to facts and determine the real reason for keeping bees, and then decide on what bees need in order to do their best work. If we get these things clearly in mind, we may make some progress.

The Editor in clover

Our Objective in Beekeeping

Obviously our objective in beekeeping is, or should be, to secure the largest possible crop of honey as well as wax. Beekeepers who are operating bees for pollination purposes or for the production of bees and queens have different objectives.

At the beginning of the season honey producers should look ahead to the beginning of the major honey flow — or at least to the approximate time this flow usually begins. It is essential that each colony be up to maximum strength in bees and that the bees used are superior in honey-gathering qualities in order to secure a crop. Of course, if the proper management during the honey flow is not applied, the beekeeper may still lose a part of the crop. More about that later.

Authorities tell us that a populous colony of bees should have the equivalent of 12 combs of brood at the beginning of the main flow. This does not mean brood in 12 combs, but rather 12 combs consisting mainly of brood in all stages. We sometimes see a colony with brood in from 16 to 20 combs. Such a colony is unusually populous but some of the combs may not contain much brood.

Now in order to reach this objec-

tive in colony build-up, it is absolutely necessary at the beginning of the season to have reasonably strong colonies, good combs for queens to use in brood rearing, and an abundance of food for bees, which means honey and pollen or, if pollen becomes scarce, a pollen supplement or substitute.

It has been said that approximately one comb of honey is required to produce one comb of brood, and that one pound of pollen is required to produce one pound of bees. If we keep in mind these facts, it is easier to understand why an abundance of food is necessary to produce populous hives of bees.

June an Important Month

In some sections of the country, especially in the South, bees have already stored a considerable amount of surplus. Here in the North the main honey flow from clovers usually begins some time during this month.

Putting on Supers

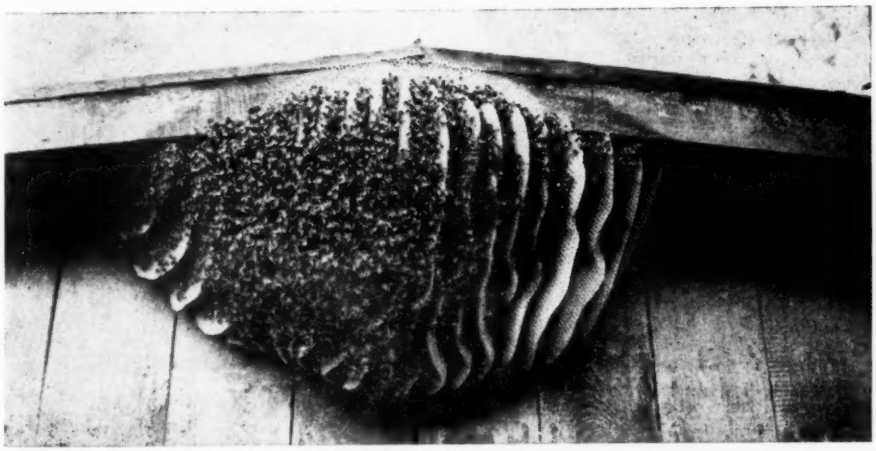
It is well to have supers on the hives in good time, a little before they are actually needed. If the main honey flow comes on with a rush, as it sometimes does, these colonies which have supers can enter them and thus congestion in the brood chambers will be relieved and swarming will not be so likely to occur.

Producing Section Comb Honey Over Double Brood Chambers

For some 10 or 12 years we have been experimenting with the double brood chamber for comb honey and have had an opportunity to try a number of different methods of procedure. Last year we operated some of our comb honey colonies in single brood chambers and others in double brood chambers. The double-brood-chamber colonies produced more honey than the single-brood-chamber colonies.

With single brood chambers it is necessary at the time the comb honey supers are put on, to remove one story or brood chamber, putting all of the sealed brood into the single story, shaking the bees off the remaining combs of open brood and giving the super to a weak colony or one used for extracted honey production.

We have come to the conclusion that it is very possible and feasible to maintain double brood chambers for section comb honey production. As a rule, very populous colonies are built up in three-story hives. At the beginning of the main flow, when comb honey supers are put on, it is possible to put all of the brood into a double-story hive, removing the extra chamber containing combs partly filled with honey to give to an extracted honey colony.



Evidently the victims of the housing shortage and overcrowded living quarters, this colony of Italian bees—60,000 strong—is shown clustering about the combs which the bees constructed on a shed near the home of W. A. Caldwell, Bordentown. An unusual feature of this colony, according to Paul L. Holcombe, inspector of bees, is the large number of combs constructed by the honey bees. A wooden shelter was placed over the colony to protect it.—From New Jersey Department of Agriculture.

XUM

We usually put on two comb honey supers at a time — sometimes three. When two supers are given, one super is placed between the two brood chambers and the other on top. This splits the brood chamber and relieves congestion and is likely to be a swarm-control measure.

We aim to examine the brood chambers every six days until danger of swarming is over. On the first inspection, after the first comb honey supers are put on, if queen cells are found they are destroyed. It is necessary in looking for cells, to shake the bees off each comb as it is examined, into the vacant space of the brood chamber. Otherwise, some cells may be missed and this would result in swarming.

We have found that destroying cells may stop swarming if the cells are very young—that is, if there are eggs in queen-cell cups. However, when more advanced cells are found, destroying them may not stop swarming.

On the second inspection, six days later, if queen cells are again found they should be destroyed and the two brood chambers reversed—that is, the upper brood chamber is put down in the position occupied by the lower brood chamber and the lower one is lifted up into the position occupied by the upper brood chamber. This can be done easily.

After the colony has given up the idea of swarming, the comb-honey super that was placed between the two brood chambers temporarily, is lifted above the second brood chamber and more comb honey supers are put on as needed.

The main advantage in this double-brood-chamber system is that at the close of the honey flow the colony has an ample amount of food for winter, assuming, of course, that the bees will carry enough nectar during the fall months to make a living.

The second advantage is that a colony in a double brood chamber is less likely to store pollen in comb honey sections than it is in the production of comb honey over a single brood chamber. There is more comb space for brood rearing and for storage of pollen in a double-brood-chamber hive than there is in a single-brood-chamber hive.

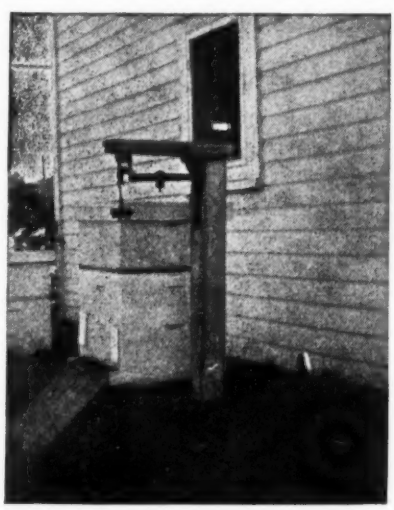
Incidentally, in the production of cut comb honey the same things apply.

It should be said that a section comb honey super should not be left between two brood chambers any longer than is absolutely necessary because there is danger of having the comb honey sections travel stained.

In this area swarming is likely to occur at the very beginning of the main flow. Just as soon as the bees get settled down to work at storing honey, they are likely to forget swarming.

Food Down to the Vanishing Point

Earlier in this talk I mentioned meeting beekeeping emergencies. In this locality we usually have a cool spell during May which lasts longer than we think it should. Colonies that were heavy with brood prior to this cool spell use a large amount of honey and pollen for brood rearing and consequently the amount of stores actually does get down to the vanishing point at times. You will recall that I mentioned the importance of never allowing a colony to get below 15 pounds in stores. It is easy to talk about this but it is another matter to prevent it. Just a few days ago I looked into some hives which appeared to be well supplied with stores earlier in the season but when I examined them I found very little honey. It was necessary to feed the bees and of course this takes time. Furthermore, it was impossible to drive into the



A scale hive tells us what bees are doing during the season.

apiary with my car so the food had to be carried into the yard from the road. This meant hard work. I dare say many beekeepers over the country had similar experiences this spring.

In this area we usually get an abundance of fall honey from goldenrod and aster. The demand for this honey is not good. People seem to prefer white honey rather than dark honey. It seems to me that it would be good strategy to leave some supers of honey in each yard in the fall, wintering about half the colonies in three-story hives instead of two. The extra honey would come in handy for feeding during May or even in June.

I have seen times during the first week in June, just before clover began to yield nectar, when bees were on the verge of starvation, especially when cold weather prevailed.

A typical backlot apiary of the South owned by W. D. Bozard of Silverstreet, South Carolina. Note that the hives are in pairs on stands.

The Value of the Scale Hive

We have a scale hive just west of the Gleanings office which we use for keeping records during the season. As a matter of fact, I can look out through the window and see the bees flying. Each day, on examining the scale I can tell at a glance whether or not the bees are making a living. If the weight is going down I know that matters are not what they should be. This scale hive serves as a barometer on the activities of bees in this area.

Last year, during the first eight days in May, our scale hive gained 25 pounds. It so happened that the weather was ideal for nectar secretion and bee flight. Dandelion was the main source of nectar. The bees gathered enough during May to last them until the clover honey flow began. This is the 15th of May, and the scale hive has made a gain of 8 pounds thus far. We are waiting for warmer weather so the bees can take advantage of the dandelion and fruit bloom.

The Magic of Colony Development

About two weeks ago the average run of colonies in this area had between four and six combs of brood. There appeared to be a shortage of pollen in some of the hives. During the past ten days there has been a good pollen flow when bees have been able to collect it. This has resulted in a very rapid development in colony strength. At present some colonies have brood in from 10 to 12 combs. It surely is amazing how quickly colonies can develop when conditions are right.

Bees Have Some Rights

Some beginners as well as experienced beekeepers make the mistake of attempting to inspect colonies on cool days when no bees are flying. Naturally, the bees resent

(Continued on page 384)

American Honey Institute News Notes

By Harriett M. Grace, Director
Commercial State Bank Building
Madison 3, Wisconsin

In Memoriam

The American Honey Institute mourns the passing of one of the members of its board of Directors —Mr. M. S. Stone. The inspiring presence and the constructive advice of Mr. Stone will be greatly missed. His loss to the Institute and to the honey industry will be an everlasting one.

Here's news for every beekeeper! That ever-faithful, always good, tested and true promoter of honey —the Old Favorite Honey Recipe Book—is going up in price! The American Honey Institute has always tried to give beekeepers booklets and leaflets at exactly what they cost the Institute. All the beekeepers have to pay for is the cost of printing. Well—the cost of printing has gone up and, therefore, the cost of the Old Favorite Honey Recipe Book will have to go up, too.

The price of this book has remained constant since it was published about nine years ago. It's been just 10 cents per copy, and $10 per 100 copies. This price will continue **until July 1. After** July 1 the price will be $12 per 100 copies and 15 cents for every single copy. Re-order **now**. Delay will cost you money!

Perhaps many of you will say that most of your customers already have a copy of the Old Favorites. But—when did most of them receive them? These books have increased the sale of honey for beekeepers for years, and the original copies are wearing out.

The American Honey Institute received a letter from a woman in Washington, who was **not** a beekeeper's wife. She told the Institute that her copy of Old Favorites had been the most frequently-used book in her house, but that it had actually worn out. She wondered whether the book was still being printed and whether she might be able to get a copy.

Of course the Institute informed her immediately that Old Favorites was still the top-selling book that the Institute publishes and forwarded her a copy.

You may be missing extra sales and neglecting customers if you don't have a supply of Old Favorites on hand. All the recipes that it contains are tried, tested, and found to be delicious. Stock up on them **now** while the cost of the booklets is low. Your customers will appreciate this booklet, and it will mean extra profits for you!

* * * * *

Many weeks ago the Honey Institute sent out a recipe and a picture of a pie it thought the American public would like. It certainly did! The recipe for Honey Cocoanut Chiffon Pie has been printed in hundreds and hundreds of newspapers throughout the country. The Institute thought that almost everyone had already printed it, but this month we received two more tear sheets containing the recipe for Honey Cocoanut Chiffon Pie. Both a paper in California and a monthly magazine had used it. The magazine also published our recipe for Honey Pecan Cookies—so it was a honey of an issue!

And another recipe that the Honey Institute sent out to papers three years ago was published with a picture. It was a Fruited Honey Wedding Cake that one paper used in an edition featuring the bride.

* * * * *

Speaking of publications — the American Honey Institute has begun to send out letters to magazines throughout the country informing them that National Honey Week will be held during the last week in October, from the 23rd through the 28th.

Magazine editors plan their issues many months in advance and the Institute wants to be sure that honey will receive some of the attention it deserves. Replies from many editors have already come in to the Institute asking for articles about the different flavors of honey, honey recipes, and the history of honey. This year should be a happy honey year for all.

(Continued on page 386)

Sales Tales

By Tom Paisley

"There is nothing new under the sun." This old and perhaps trite statement certainly contains a sound element of truth. In the past month it has been brought home to me several times how past history often repeats itself.

Several months ago in this column we talked about the Pfund Honey Grader and the various problems of honey grading and standardization. In talking with many beekeepers in this part of the country I have received many thoughts and suggestions about the new plan for a government honey grader which will be economical and practical for many small beekeepers who cannot afford the expense of a Pfund grader. Here is where time has repeated itself.

In checking back to see what types of honey graders have been offered for sale in the past, I find that for four or five years in the early twenties a bee supply company listed in its catalog a reasonable, economically priced color grader based on exactly the same principles which are being used in the new grading project by the Government. In the beekeeping field as in many other enterprises, ideas which may seem new today have actually been used or tried many times.

This same thought is always applicable in the field of selling. Many potential salesmen say "tell me something new about selling." This is almost an impossible task for me and would certainly be difficult for others no matter how highly trained they were in the field of selling, for the basic principles of selling are the same today as they were when Abe Lincoln was a storekeeper in Illinois or when Harry Truman was a tie merchant in Missouri.

Anyone Who Tries to Sell Honey Should be a Good Salesman

Why there are not more good honey salesmen is a mystery to me. Certainly all of the factors necessary for success are here with this product. Honey is one of nature's oldest and most respected food products. The product is excellent. It can be attractively packaged and it is reasonably priced. Potential customers for honey are everywhere for there are very few parents in this country who are not interested in the health of their families. There are also very few children who are not interested in sweets. The product is excellent and the potential customers are everywhere, and yet there is not the emphasis on selling honey that there should be. With an estimated one-half million beekeepers in this country, there are far, far too many people who do not know about this product or who do not have it readily available to them. Of all the products that the large super markets sell, honey is one of the slower moving items that they carry except—and these exceptions are important — where some selling has been done by one of us who is interested in the marketing of honey.

To be a good honey salesman you do not have to go from store to store or from door to door trying to peddle honey. It is essential, however, to be thinking about honey and its use in restaurants, bakeries, sweetshops, and other stores which we are constantly visiting. It is amazing to me to hear how many restaurant owners and managers say that they use very little honey. When you ask them why they use very little honey they do not know. Some of these people have become our best customers.

The most successful individuals in the marketing of honey, whether they sell by the jar or by the carload, are those people who are continuously "advertising" by word of mouth and "selling" by the very confidence that built their product and themselves. Certainly there should be none of you who cannot qualify as good honey salesmen.

With more healthy talk about the value of honey and its wide and varied uses, there would be less bellyaching about the ills connected with honey marketing.

* * * * *

Siftings

"The queen is, therefore, an animated egg laying machine intimately regulated by environmental conditions within and without the hive." —From "Queen Rearing", by Harry H. Laidlaw and J. E. Eckert.

Just News

The Middlesex County (Massachusetts) Beekeepers' Association held its annual meeting and elected the following officers for the year starting May 1, 1950: Albert Baptiste of Concord, President; Samuel Fardy of Lexington, Vice-President; John Furber of Auburndale, Secretary-Treasurer; Harold Stevens of Weston, and Arthur Southwick of Waban, Directors. The first outdoor meeting for the year was scheduled for May 27 at the home of J. Fitzgerald of Weston, Massachusetts, one of our members. The June meeting will be held June 24 at the home of J. S. Kemp of Stoneham, Massachusetts. — John H. Furber, Sec.-Treas.

* * * * *

The newly organized Crawford County (Kansas) Beekeepers' Association met in the Chamber of Commerce Rooms in Girard, Kansas, at 8 p.m. on Wednesday, May 3, 1950. Four new members were accepted. Our next meeting will be held at 2 p.m., Sunday, June 4, at the apiary of C. C. Reickenbach, seven miles northeast of Pittsburg, Kansas. All beekeepers of the surrounding territory are invited to attend.—R. S. Snare, Sec.

* * * * *

The Mississippi Beekeepers' Association will hold its annual meeting at Mississippi State College on Wednesday, July 26, during the annual Farm and Home Week at the College. This meeting was held during the Farm and Home Week last year and the attending members thought so well of the arrangement they voted unanimously to hold the meeting again during Farm and Home Week.—Clay Lyle, Entomologist.

* * * * *

The first **New Jersey Beekeepers' Association** meeting of the season was held May 20 at the apiary of Joseph Fekel of Vineland, New Jersey. It was the first field meeting of the New Jersey Beekeepers' Association to be held in conjunction with the newly formed South Jersey Beekeepers' Association, a branch of the N.J.B.A. An interesting program, which included frame wiring, foundation imbedding, and bee yard demonstrations, was conducted at Mr. Fekel's well equipped apiary.

The second field meeting of the year will be held in conjunction with the Morris County branch of the New Jersey Beekeepers' Association on June 17 at the farm and apiary of Fred Coddington in Millington, New Jersey. The meeting will get under way at 10:30 a.m. There will be talks on pollination, seasonal operations, and a bee yard demonstration. All persons interested in beekeeping are cordially invited to attend.—Milton H. Stricker, Sec.-Treas.

* * * * *

The St. Louis-St. Louis County Beekeepers' Association at its May meeting voted to change the name of the organization to Eastern Missouri Beekeepers. An increase in the number of beekeepers from outside St. Louis and St. Louis County joining the organization, it is felt, made the change in designation necessary. August P. Bielmann of Gray Summit continues as President. Walter Hyde of St. Louis is Vice-President and Geo. C. Nagel of Maplewood, Secretary-Treasurer. The Executive Committee includes the following: Alvin R. Campbell of Valley Park; Joseph F. Wiley of Rock Hill; John McAnnar of St. Louis; Maurice C. Nowlin of Gray Summit; Norman R. Mahoney of Maplewood; and C. R. Criger of Maplewood. The Annual Summer Field Meet of the organization will be held on Sunday, August 6, in Missouri Botanical Garden Arboretum at Gray Summit, Franklin County, Missouri.—Geo. C. Nagel, Sec.-Treas.

* * * * *

Agricultural Abstracts reprinted monthly from The Bee World are available at 7S 6d or $1.05 in U.S. currency for 12 issues. The Bee World has long served as a link between beekeepers and research workers. The need for a publication giving abstracts on apiculture has been felt for a number of years in various countries. At the Thirteenth International Beekeeping Congress in Amsterdam in August 1949 it became possible to formulate the requirements of research workers and beekeepers in various coun-

tries. An abstract is a summary of a publication or article accompanied by an adequate bibliographical description to enable the article to be traced. Subscriptions are payable to Hon. Secretary, Bee Research Association, 530-1 Salisbury House, London Wall, London, E C 2, England.

* * * * *

Miss Beverley E. Brink, a graduate of Montana State University School of Journalism, has accepted a position as assistant in the office of the American Beekeeping Federation at Atlantic, Iowa. She is an experienced beekeeper and, in addition to routine office work and correspondence, will assist in the preparation of the News Letter and with news items for release to newspapers, magazines, and the radio.—Glenn O. Jones, Sec. American Beekeeping Federation.

* * * * *

The Montgomery County (Ohio) Beekeepers' Association will hold its summer meeting on June 4 at Madison Township House located on Union Road about one mile south of Trotwood. M. J. Deyell, Editor of Gleanings in Bee Culture, will appear on the program. Beekeepers of Miami and Greene Counties as well as others are cordially invited. —F. C. Charbonneau, President.

* * * * *

The sudden death of **Dr. H. C. Meriam** of Cornish, Maine, who was President of the Maine State Association of Beekeepers, caused a change in the staff of officers. At the annual meeting held on April 6 in Orono the following officers were elected: President, Edward M. Wills of Kents Hill; Vice-President, Frank G. Burgess of Union; Secretary and Treasurer, Howard L. Winslow of Cumberland Centre; Librarian, Howard L. Winslow. — Edward M. Wills, Pres.

* * * * *

Honey Diversion Program and Honey Export Program issued by the U. S. Department of Agriculture on May 9, 1950 two separate bulletins giving detailed information and instructions to those desiring to participate in the subsidy paid by the Government on honey sold for new uses and on honey sold for export. These may be obtained in the far western states from R. M. Walker, 2180 Milvia St., Berkeley, California, and for the eastern states from E. M. Graham, U. S. Department of Agriculture, Fruit and Vegetable Branch, Washington 25, D. C. Each bulletin covers seven pages of typewritten instructions followed by four separate application blanks for use. There are two separate periods, from May 9 to June 30, and from July 1 to December 31, 1950, for payment of 3.75 cents per pound on Class B or better honey sold for new uses in the U. S., and on Class B or better honey sold for export 4.5 cents or 50 percent of honey priced at 9 cents or less per pound. The instructions are in considerable detail and those interested should send for the bulletin.

The subsidy is paid only for new users of honey sold for use in the U. S. or on honey sold for export from U. S. It is not the long-awaited price support for honey voted by Congress but an effort to remove surplus prior to the establishment of price support.

* * * * *

The Westchester County Beekeepers Association will hold its first outdoor meeting of the year on Sunday, June 18, at 2:30 p.m., at the home of Mrs. Julia L. R. Chase, 12 Windle Park, Tarrytown, New York. Following a short business meeting there will be a practical demonstration of hive inspection given by the Mutual Assistance Committee. Visitors are always welcome. Refreshments will be served.—B. F. Miller, Publicity.

* * * * *

Who's Who in Apiculture Addition

Because of the importance of a branch of the U. S. Department of Agriculture to honey, the Production and Marketing Administration, Specialty Crops Division, Fruit and Vegetable Branch, Washington, D. C., with Harold J. Clay in charge, this reference should have been included in our "Who's Who in Apiculture" published on pages 292 and 293 of our May 1950 issue.

* * * * *

Erie County (Ohio) Beekeepers Association held its May meeting at the home of Stanley Wright, Arlington Road, on May 5. S. E. Bailey, State Apiarist, showed some very interesting films on the life and habits of the honey bee, and gave a short talk on the work of

(Continued on page 385)

Buy and Sell Here

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 15c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding publication.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

NEW CROP of honey shipped daily from producer in Florida. Pure orange blossom, 5 lbs., $2.25; Pure Florida cut comb honey, 5-lb. pail, $2.75. No C.O.D. orders. All shipments prepaid. E. R. Raley, Daytona Beach, Box 1610, Florida.

NEW CROP COMB HONEY — Ready about July 1st. C. W. Schrader, Waterville, N. Y.

CLOVER extracted honey in sixties. Abram Brubaker, Lancaster, Pa., Rt. 1.

CLOVER EXTRACTED in 60-lb. cans. Liquid, $8.40 per can. Crystallized, $8.00 per can. Lose Brothers, 206 E. Jefferson St., Louisville, Ky.

HONEY, choice light amber mixed with citrus in 60-pound cans, 12 cents per pound. N. J. Barnett, Box 895, Pharr, Texas.

LIGHT AMBER honey in 60's, 10 and 11c. Sample 15c. Joseph Fekel, Rt. 4, Vineland, N. J.

Orange blossom, Florida tupelo, white clover, and buckwheat honey in one or five gallon cans. Pure maple syrup in gallon cans. Alexander Company, 819 Reynolds Rd., Toledo, O.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on COD terms except where the buyer has thoroughly established his credit with the seller.

WANTED—Honey and wax, any quantity. Send samples and prices. Alexander Company, 819 Reynolds Road, Toledo 7, Ohio.

CASH FOR YOUR HONEY—Light extracted or comb. Regular trade send sample. 60-lb. cans furnished if desired. W. R. Moomaw, Stone Creek, Ohio.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce St., Los Angeles 21, Calif.

WANTED — White and amber honey. Any amount. D. F. Treap, 316 Keenan Ave., Cuyahoga Falls, Ohio.

WANTED—EXTRACTED HONEY—Clover or light amber. C. H. Denny, Rt. 4, Ravenna, Ohio.

HONEY AND WAX WANTED — Mail sample. Advise quantity. BRYANT & SAWYER, 2425 Hunter St., Los Angeles 21, Calif.

CASH FOR BEESWAX — Write as to quantity and we will quote price. Muench-Kreuzer Candle Co., Inc., Syracuse N. Y.

CASH for your comb honey and all types extracted. Send sample and best price. Buckeye Honey Co., 3930 N. High St., Columbus 2, Ohio.

WANTED—Comb honey and extracted honey, large or small amounts. Send price list and samples. R. A. Raley, Box 2263, Daytona Beach, Fla.

WANTED — White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

FOR SALE

QUEENBEE PAINTING OUTFIT, $1.00; colony records, 10-15c postpaid. Southwick Apiaries, Waban, Mass.

WE CARRY a full line of ROOT QUALity Bee Supplies. Prairie View Honey Co., 12303 12th St., Detroit 6, Mich.

FOR SALE — Write for large free Bee Supply Catalog. We manufacture bee hives, foundation, tanks, and extractors. Listing many items not found in other catalogs. Walter T. Kelley Co., Paducah, Ky.

WRITE FOR CATALOG — Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Mich.

The only comb foundation plant in the East. We sell foundation, work your wax, render combs and cappings. Robinson's Wax Works, R.D. 3, Auburn, N. Y.

SIMPLEX TRAP clips queens without handling, $1.00 postpaid. Instant Frame Spacers — eight-nine, specify size, $1.50 postpaid. Free circulars. George Leys, 36 Jackson St., New Rochelle, N. Y.

YOUR WAX WORKED into medium brood foundation, 23c pound; 100 pounds, $19.00. Medium brood foundation for sale at 65c pound. Fred Peterson, Alden, Iowa.

WINDOW CARTONS, attractive, two-colored, selling out at a sacrifice, 4¼ x 4¼ x 1⅞ in., $9.00 per 1000, fob. Lose Brothers, 206 E. Jefferson St., Louisville, Ky.

FOR SALE—600 10-fr. two-story colonies bees in fine shape in all practically new equipment; fine lot of bees at $15.00 each. W. A. Wiley, Jeweler, West Point, Miss.

CLEAN UP AFB WITH SULFA. 25 tablets, 50c; 50, $1.00; 100, $1.50; 1000, $7.00. Write for big 64-page catalog listing many items not found in other catalogs. WALTER T. KELLEY CO., Paducah, Kentucky.

10-frame bodies drawn combs, $4.50; metal covers, $1.00; deep supers, $1.00. Irvin VanDevier, Medina, Ohio.

FOR SALE: 1200 two-story 10-frame colonies Italian bees located in famous Flathead Valley. Thirty registered locations. Seventeen-year average production, 140 pounds. Good wholesale market. 4000 full-depth lock-cornered supers with good combs. Queen excluders. Good modern extracting plant and wood working shop in good town. Machinery ready to go. W. R. Hettrick, Ronon, Montana.

200 standard depth 10-frame supers, 9 drawn combs each, mostly 3-ply, excellent condition, no disease, $2.50 each FOB your truck only. Hiltner's Apiaries, North Creek, Ohio.

FOR SALE—Root two-frame reversible extractor. Excellent condition, $27.50. Roy Eykamp, Lake Preston, S. D.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

GOOD ITALIAN QUEENS, 60c each. D. W. HOWELL, Shellman, Georgia.

CAUCASIANS—Booking orders for 1950. Lewis & Tillery Bee Co., Route 1, Box 280, Greenville, Alabama.

YANCEY HUSTLERS — Reliable package bees and queens. Prices right. Caney Valley Apiaries, 2500 Nichols, Bay City, Texas.

BEES AND QUEENS. Send for FREE circulars. Over 30 years a shipper. Blue Bonnet Apiaries, Weslaco, Texas.

GOLDEN QUEENS, 90c airmail. Write for quantity prices. O. E. Brown, Route 1, Asheboro, N. C.

CAUCASIAN QUEENS, 1 to 9 inclusive, $1.25 each; 10 to 49 inclusive, 90c each; 50 and over, 75c each. Howard E. Crom, Rt. 1, Box 75, Ripon, Calif.

PACKAGE BEES headed by Mountain Gray Caucasians or leather colored Italian queens. March 20 delivery. Write for prices. Twin Bee Co-op., 3616 Caucasian Circle, Tampa, Florida.

BRIGHT YELLOW GOLDEN Italian Bees and Queens. 2 lbs., $3.50. 3 lbs., $4.50. Queens, $1.10 each. Tested, $2.00. Guilford Apiaries, 4300 A. Burlington Rd., Greensboro, N. C.

THREE-BANDED ITALIAN Bees and Queens. 2 lbs., $3.50; 3 lbs., $4.50; Queens, $1.10 each; Tested, $2.00. Bessemer Apiaries, 4300 A. Raleigh Rd., Greensboro, N. C.

FOR SALE — 200 colonies bees with all equipment. Roger A. Morse, Saugerties, N. Y.

HONEY LABELS

Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

Michigan Headquarters for

Root QUALITY

Bee Supplies

Complete Line of Bee Supplies and Honey Containers
Prompt Service

Michigan Bee and Farm Supply

510 N. Cedar St.
Box 7 Lansing, Michigan

G. B. Lewis Wooden Goods!

Dadant's World Famous Crimp Wired Foundation. — Their 85 years' experience is your safeguard. Catalogue on request.

Dotson's Apiaries

3059 W. Roxboro Rd., NE
ATLANTA, GEORGIA

HONEY WANTED

Carloads and less than carloads. Mail sample and best prices in all grades.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

CAUCASIANS CARNIOLANS

Hardy, prolific, rapid build-up, best of workers. Caucasians have the longest tongue of any race. Both races build beautiful white combs. BOTH ARE THE GENTLEST OF ALL RACES OF BEES. Gentleness is safest in towns, near neighbors, or near streets or highways. Gentleness saves time, sweat, patience, and work.

Prices, Both Races:

Untested Queens	$1.00 each
Tested Queens	1.75 each

By Air Mail

Albert G. Hann

Glen Gardner, New Jersey

Queens Our Specialty

Italian, Caucasian, and Carniolans

Three Isolated Mating Yards to Prevent Mixing Breeds

Italian queens, 1-10, $0.90
11-49, $0.85 50-up, $0.80
After May 15th, $0.50 each
Carniolan, the most gentle and good producers, $1.20 each
Caucasian, very gentle and produce beautiful comb honey, $.90

All queens shipped by Air Mail and guaranteed to please

Walter D. Leverette Apiaries

Box 364 Fort Pierce, Florida

Flowers' Quality Italians

That will stand test for honey gatherers, gentle, prolific. Our motto is to serve you with the best young bees and queens money can buy. Ask our customers. State health certificate with each shipment, prompt, live delivery guaranteed. Replacement or refund made promptly upon receipt of bad order from your express agent. No orders too large or too small, shipped when wanted. Place orders early.

Packages with young queens	F.O.B.
2-lb. package	$2.50
3-lb. package	3.15
4-lb. package	4.00
Ex. queens	1.00 Del.

Flowers Bee Co., Jesup, Ga.

Three Band and Three Way DR Italian Package Bees and Queens

JACKSON APIARIES

Funston, Ga.

BREWER'S LINE BRED Caucasian queens, 1-99, $1.00; 100 and up, 75c. Member ABBA. Brewer Brothers Apiaries, 36-16 Caucasian Circle, Tampa 9, Florida.

YOUNG VIGOROUS ITALIAN QUEENS, 75c each. Live delivery guaranteed. Alabama Apiaries, Uriah 2, Alabama.

THE SAME PRICE TO EVERYBODY. 75c for Italian queens. 2 lb. package with young laying queen, $3.00; and 3 lb. package with young laying queen, $3.75. Southern Apiaries & Supplies Company, Chatom Alabama.

EARLY PACKAGE BEES. Prompt shipment begins May 10th. Two-pound package and queen, $5.50 postpaid. Three-pound package and queen, $6.60 postpaid. Choice Italian queen, $1.25. Safe arrival guaranteed. Health certificate furnished. Birdie M. Hartle, Reynoldsville, Pa.

GREEN'S profit producing queens are the best. Backed by 22 years of breeding better queens, 75c each. D. P. Green, R. 2, Deland, Fla., Phone 512XM.

NORTHERN ITALIAN QUEENS—Ready June 25th, $1.00 each; 10-up, 90c. Shirl Baker, Rodney, Michigan.

QUALITY Caucasian Queens. Gentle, good working bees, $1.00 each. Fred C. Brock, McDonald, Tenn.

CAUCASIAN QUEENS, 75c each. EPPLING'S APIARIES, "IDLEWILDE", Covington, Virginia.

GOLDEN Italian Queens marked with bright lacquer, 75c each, postpaid. We guarantee you to be satisfied with them in every respect or your money will be refunded. Brose Apiaries, Felton, Calif.

CAUCASIAN bees and queens, 2 lb. and queen, $3.00 each; 3 lb. with queen, $4.00. Select untested queens, 1 to 25, 90c; 25-up, 75c. Prompt delivery. Black River Apiaries, Rt. 1, Currie, N. C.

GOLDEN ITALIAN BEES AND QUEENS —Very gentle to work with. 2 lb. with queen, $3.00 each; 3 lb. with queen, $4.00. Select untested queens, 1 to 25, 90c; 25-up, 75c. Carolina Bee Farm, Graham, N. C.

THREE BANDED ITALIAN bees and queens, 2 lb. with queen, $3.00; 3 lb. with queen, $4.00; select untested queens, 1 to 25, 90c each; 25-up, 75c each. Alamance Bee Co., Graham, N. C.

35 COLONIES BEES. A-1 condition. Fred Bachman, RFD 3, Coshocton, Ohio.

FOR SALE—35 hives to be shaken. 75c lb., you shake in own container. Walter H. Voyles, 6701 Grand Ave., Arlington, Calif.

FOR SALE — 270 hives of bees and equipment. E. E. Frasher, 122 Linden, Big Rapids, Mich.

FOR SALE—One to one hundred colonies, 1½-story ten-frame, galvanized covers, Italian bees, $10.00 each. State inspected. White Pine Bee Farms, Rockton, Pa.

HELP WANTED

HONEY SALESMAN WANTED — Good income possible — Protected territory — Write Box No. 650, care of Gleanings, Medina, Ohio.

SEEDS

SEEDS OF HONEY PLANTS. Ask for free catalogue. Pellett Gardens, Atlantic, Iowa.

SITUATION WANTED

SITUATION WANTED — Single man, good health, 15 years' apiary experience references. Doesn't smoke or drink. G. W. Anderson, Webb City, Missouri.

MISCELLANEOUS

BEES FOR SALE OR LEASE—(1.) Will sell part or complete units to fit your requirements. (2.) You can purchase part of unit and lease additional quantities to round out your needs with option to buy later. (3.) Proven territory: Idaho, Wyoming, Montana, Nebraska—Sweet clover, alfalfa areas. (4.) Our processing plant and marketing program assures outlet all honey produced from bees purchased or leased. Bright future—low cost operations—Our 45 years practical production experience ready to assist you getting started. Right prices, reasonable terms available. R. D. BRADSHAW & SONS, Wendell, Idaho, Largest Individual Producer-Packer in U. S.

SUPPLIES

ATTENTION BEEKEEPERS IN MINNESOTA and adjacent states. We offer a real service on Lewis-Dadant Supplies, honey containers, and labels at a price saving to you. Top market prices paid for extracted honey and beeswax. HONEY SALES COMPANY, 1806-08 NO. WASHINGTON AVE., MINNEAPOLIS, MINN.

MAGAZINES

WESTERN CANADA BEEKEEPER—Official organ of the Manitoba Beekeepers' Association. One year, $1.50; two years, $2.25; three years, $3.00. In combination with Gleanings in Bee Culture, $2.75. 211 Affleck Bldg., Winnipeg, Canada.

KNOW interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English by the Bhupen Apiaries (Himalayas), Ramgarrh, Dist Naini Tal, U.P. India, or abtainable from them. Subs. Rs7/—or 10 shillings or 2.25 dollars per annum. Single copy Rs¼ s. 1/9 or 40 cents (International Money Order). Payment in mint postage stamps of your country acepted.

THE BEE WORLD—The leading journal of Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free. 12 cents stamps. Membership to the paper 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

Read the South African Bee Journal. Published every two months. Subscription 7/6 per year to the Treasurer, P. O. Box 3306, Cape Town, South Africa.

ANGORA GOATS

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription—$1.00. Hotel Cactus, San Angelo, Texas.

Package Bees
Italian Queens
For 1950

Packages with Queens:

	2 lbs.	3 lbs.	4 lbs.	5 lbs.
1-99	$3.00	$3.90	$4.70	$5.30
100-up	2.75	3.75	4.40	5.00

Queens 90c each Airmail postpaid
—clipped on request.
No better quality at any price
Satisfaction guaranteed

Geo. A. Hummer & Sons
Prairie Point, Miss.
Established 1892

Little & Moore Apiaries
Originally
LITTLE'S APIARIES
The John M. Davis Strain
GUARANTEED TO PLEASE
or money refunded
April 1st to June 1st:
1 to 10, $1.20 each
10 to 100, $1.10 each
June 1st to Nov. 15th:
1 to 10, $1.00 each
10-100, 90c each
Little & Moore Apiaries
Shelbyville, Tenn.

Mountain Caucasian Queens for June

Order now while available—genuine gray queens whose bees are gentle and good honey gatherers.
Prices: Postpaid, 1 to 24, $1.10; 25 to 99, $1.05; 100-up, $1.00. Tested queens, $2.50 ea. A-1 Breeders, $7.00 and $10.00 ea.
BOLLING BEE CO.
Bolling, Ala.
"Dependable Service"

High Quality
QUEENS
75c each
by Airmail
Carlus T. Harper
New Brockton, Ala.

Look for this Sign
When You Want
QUALITY AT LOW COST

Trade Mk. Reg.
U. S. Pat. Off.

KELLEY — "The Bee Man"

QUEENS

Improved Hybrid Cross

These bees appear to be light, 3-banded Italians and are gentle and easy to handle and stay on the combs. However, they are of greatly improved quality and lay frame after frame of solid brood.

Young Improved Laying Queens by Prepaid Air Mail **75c Each**

Lots of 25 and up, 65c Each

Walter T. Kelley Co., Box 210, Paducah, Ky.

QUEENS Garon's High Producing Stock **QUEENS**
to Overcome Low Honey Prices

PRICES

On Our 3-Banded Italian Quality Queens		On Garon Reared Dadant Starline Hybrid Disease Resistant Queens	
1-24	70c	1-24	$1.10
25-99	65	25-99	1.00
100-499	60	100-499	.95

Queens Mailed Prepaid, Regular or Air Mail, Painted and (or) Clipped at No Extra Charges.

Garon Bee Company Donaldsonville, La.

The Rich Honey Farms Jeanerette, La.

A CHOICE OF THREE FINE STRAINS OF QUEENS	1-24	24-up
DADANT'S STARLINE HYBRIDS	$1.10	$1.00
Rich's Leather Italians	.85	.75
Caucasians	.85	.75

These prices are effective to Sept. 16th

A.O.A. QUALITY FIRST AMERICAN BEE BREEDERS ASSN.

Bees & Queens
Quality Fine
Price in Line
Write
J. F. McVay, Jackson, Ala.

Northern Bred Leather Colored Italian Queens
50c Each
Air Mail if distance justifies
Better equipped to give good service
Diemer Bee Co.
Rt. 2 Box 7 Liberty, Mo.

For Sale
Italian package bees and queens
Health certificate and live delivery guaranteed.
LYNN WILLIAMS
Paradise, Calif.

Italian Package Bees and Queens
Queens after May 1st, 75c each, postpaid — 10% discount on orders of 50 or more.
F. E. Morrison
Rt. 3 Box 3696 Auburn, Calif.

ADVENTURE AND EXPERIMENT

(Continued from page 338)

duction, as it has all the characteristics of a big success.

[This two-queen idea is not new by any means. Some beekeepers over the country have experimented with it for many years. We now have a number of two-queen hives—that is, wide hives with a queen at each end on the same plane. One objection we have to such a hive is that it is cumbersome to handle in the event that it has to be moved to another apiary site. One should have a 99-year lease on a location.

Doubtless our readers have seen a picture of our two-queen hives just west of the Gleanings office. Space does not permit of a detailed description at this time. We hope to give the history of this two-queen hive in the near future. Apparently the hive we have is constructed somewhat differently from Mr. Albrecht's hive but the principle appears to be the same. Some maintain two-queen hives by having one queen below and another above—separated by two queen excluders. During the heavy honey flow such hives may become skyscrapers.—Ed.]

Merrill's

First Quality

Italian D.R. or Regular stock, 38 years' selective breeding makes them good as the best. Requeen while they are cheap.

First quality untested queens	$ .50
Tested queens any number	1.00
2 lb. packages with queen	2.00
3 lb. packages with queen	2.75

Prompt Delivery and 100% Satisfaction

MERRILL BEE COMPANY

P. O. Box 194

State Line, Miss.

QUEENS Untested ....$ .50 Tested 1.00

2-lb. Pkg. with Queen 2.50

3-lb. Pkg. with Queen 3.25

Bright 3-Banded Italians

Now Ready for Immediate Shipment

Order NORMAN BROS. bees and queens and get the old fashion dollar's worth in superior quality plus quick service. Safe arrival, satisfaction guaranteed. Health certificate furnished. Package bees F.O.B. Express. If wanted shipped parcel post Add Postage.

Norman Bros. Apiaries

Ramer, Ala.

MOORE'S STRAIN

Away back in 1879 I commenced rearing Italian queens with the object of improvement constantly in view. By careful selection during all these years I have succeeded in producing a strain of three-banded leather colored Italian bees known as Moore's strain of Italians which has won a world-wide reputation for honey gathering, hardiness, gentleness, etc.

Send for descriptive circular and read reports from those who have tried them. Untested queens, $1.00 each; 12 or more, 75c each.

J. P. Moore, Falmouth, Ky.

Route 3

Former Address: Morgan, Kentucky

Safe arrival and satisfaction guaranteed

First Quality Leather Color

Italian Queens

75c each

10 % discount for 50 or more

John S. Shackelford

Rio Oso, California

Thrifty Queens

Three-banded Italians only

Lots of 100 $50.00

Smaller lots 60c each

Package Bees available to July 1st

Remember — Thrifty Bees are Guaranteed to Please

W. J. Forehand & Sons

Fort Deposit, Ala.

Breeders Since 1892

HOLLOPETER'S HARDY ITALIANS
Our 50th year with bees, 40th as commercial queen breeders, in northern mountain location suited to breeding hardy, prolific queens, with excellent in-and-out mail service. We give prompt service and complete satisfaction. **Queens, $1.00 each.** Ready May 15th.
White Pine Bee Farms, Rockton, Pa.

KOEHNEN'S
Package Bees and Queens
For Quality and Service
KOEHNEN'S APIARIES
GLENN, CALIFORNIA

ITALIAN BEES AND QUEENS
2 lb. package with queen $2.00
3 lb. package with queen 3.00
Queens, each ..... .45
10% will book order, balance 10 days before shipping date. Health certificate with each order, live delivery guaranteed.
BAYOU BEE CO.
Rt. 1 Box 49 Montegut, La.

PRITCHARD'S QUEENS
I am using James W. Bain's breeding stock and system of queen rearing
22 Years' Queen Rearing Experience
10 Years with My Grandfather
Mel Pritchard
QUEENS $1.00 ea. Satisfaction Guaranteed
Lawrence Pritchard, Ludlow Falls, O.

Tested Queens — $1.00
Hardy Northern Stock
Bred for Quality
Shipment begins June 1st
RICHARD LIVERMORE APIARIES
Collins, Ohio

Healthy Italian Bees & Queens
Write for 1950 Prices
Georgia Bee & Honey Apiaries
P. O. Box 312 Hortense, Ga.

Package Bees Headed by Mountain Gray Caucasians or Leather Italian Queens

	1-24	24-99	100-up
2 lb. with queen	$3.60	$3.45	$3.25
3 lb. with queen	4.50	4.25	4.10
Queens	1.10	1.00	.95

March 20 delivery
TWIN BEE CO-OP.
3616 Caucasian Circle, Tampa 9, Fla.

ORCHARD PEST CONTROL AND BEES

(Continued from page 356)

chemical applications occur. (7) Keep berry patches, tomato fields, and gardens free from weeds upon which poisonous spray and dust materials will collect and increase risk of poisoning bees. (8) Apply necessary dusts and finely-atomized sprays at a time when the air is relatively still. Do not permit poisonous dusts or sprays to drift upon plants being worked by the bees. (9) Spray and dust orchards and berry crops intelligently. Do not apply more chemicals, more treatments, nor stronger dosages than are necessary to secure effective insect and plant disease control. Consult the official Utah fruit spray recommendations for correct dosages and timing. (10) Store and handle all poisonous agricultural chemicals in a manner safe to persons, livestock, bees, and other wildlife.

*Utah State Agricultural College Extension Service, Carl Frischknecht, Director Cooperative Extension Work in Agriculture and Home Economics, Utah State Agricultural College and U. S. Department of Agriculture Cooperating. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914.

A TALK TO BEGINNERS

(Continued from page 373)

this interference. They guard the honey they have gathered as humans guard the money they have earned.

If beginner beekeepers would respect the rights of the bees and manipulate hives only during the middle of the day when bees are working well and bringing in nectar and pollen, there would be less trouble caused by bees and, incidentally beekeepers would maintain the good will of neighbors.

Due to the fact that suburban areas where bees are being kept are being rapidly built up and settled, it is going to be increasingly necessary to use care in handling bees properly to avoid having trouble with neighbors.

May we repeat: Manipulate hives of bees only during a warm day when bees are flying well and do not get bees stirred up unduly. **Do not leave combs or supers of honey uncovered.**

POLLINATION SERVICE AND MOVING BEES

(Continued from page 340)

fornia, he will have to soon abandon long and frequent hauls or he will go bankrupt.

Thus, when the beekeeper is no longer the forgotten man of agriculture and he gets paid a fraction of that "twenty times greater value than the honey and wax the bees produce", beekeeping practice is going to change in a great many sections of these United States. More beekeepers than ever will be moving their bees two or more times a year and will make as much or more money by furnishing pollination service with strong colonies of bees than they will produce from their honey crops.

Furthermore, the demand for pollination will increase the total number of bees and make it harder than ever to make a surplus of honey in many localities. Hence the urgent necessity of improving our methods and cutting our overhead expenses is obvious. I feel that the movement of bees without screens, cleats, nails, or staples is one of the most important of these improvements.

[Moving bees without screens has been and is being done in some states. It is extremely essential to have a good truck and a capable driver. Long distance moving should be done at night. In the event that a truck carrying a large load of unscreened bees should get held for repairs during a hot day in a large town or a city, the bees could and likely would cause considerable annoyance and perhaps some trouble.—Ed.]

Hardy Northern Queens

Genuine leather-colored queens and bees that excel in honey production and pollination. We have shipped this same strain of bees to many parts of the world in the last six years without complaint or dissatisfaction.

10-frame colony, tested queen,	$15.00
3-lb. pkg. with young queen	4.75
Untested Queens	1.00
Tested Queens	2.00

Health certificate with each shipment

Barger Apiaries
Carey, Ohio

Italian Bees and Queens

CUSTOMERS: New and old, I take this method of soliciting your future orders and will appreciate a continuance of your business. There is no deposit required to book an order with me. Full weight, a health certificate and live arrival guaranteed. Queens clipped at no extra cost.

Price for 1950 package bees with queen; also extra queens:

	2 lb.	3 lb.	4 lb.	Ex. Queens
1 to 24	$2.50	$3.45	$4.30	75c
25 to 99	2.40	3.35	4.15	70c
100 up	2.35	3.15	4.00	65c

Farris Homan
Shannon, Miss.

JUST NEWS

(Continued from page 377)

state and county inspectors. Refreshments were served by the hostess. The June meeting will be held at the home of L. J. Guisinaer of Birmingham, Ohio.—Mrs. Al Roeser, Sec.

* * * * *

A New Book "Queen Rearing"

This new book, just recently off the press, by Harry H. Laidlaw, Jr., and J. E. Eckert of the University of California, contains an account of the early attempts at queen rearing as well as the latest technique used in the artificial insemination of queen bees. Rather than lay down a hard and fast rule for producing queens commercially or in small lots, the authors have reviewed methods used by various queen breeders and have suggested some short cuts or improvements that might be used. The last two chapters entitled "Breeding and Stock Improvement" and "Controlled Mating" are rather technical and cannot be read rapidly, especially by those with no biological training. However, these chapters do contain a great deal of worthwhile information which is essential for those who wish to attain success in the business of "Queen Rearing". Published by Dadant & Sons, Hamilton, Illinois. Price is $2.50.

* * * * *

According to the April 6 Agricultural News Service, Gainesville, Florida, the **Florida Honey Coop-**

(Continued on page 388)

Bring Your Dreams Down to Earth
Buy U. S. Savings Bonds

Summer Prices

Queens 50c

	1-50	51-up
2-lb. pkg. with queen	$2.40	$2.20
3-lb. pkg. with queen	3.00	2.80

For queenless packages deduct price of the queen.

W. E. Plant

Hattiesburg, Mississippi

Tried in Service and Found Good . . .

IMPERIAL ITALIAN and Hybrid Caucasian Queens .....80c each

Two-pound package with queen $2.50

Three-pound package with queen $3.40

The Coffey Apiaries

Whitsett, Texas

We are interested in Buying HONEY

Send sample and price

T. J. Paisley Co.

Medina, Ohio

Yellow Italian Queens

Untested, each, 50c p.p.
Air Mail, 55c each
Use M. O. for small orders

Plauche Bee Farm

Hamburg, La.

AMERICAN HONEY INSTITUTE

(Continued from page 374)

The air waves have been a happy honey ground for the last few weeks. Around Honey for Breakfast Week Mrs. Grace spoke twice on WHA, the Wisconsin state station. First she gave several suggestions for ways to use egg yolks that were left after making an angel food cake. In the second broadcast Mrs. Grace shared the microphone with Miss Cay Hillegas, home economist for the Sunkist Company in California. Here the topic was "Lemons and Honey"—a delicious combination at any time.

Mrs. Grace spoke for 20 minutes over WTMJ, the largest radio station in Milwaukee. Here she gave several recipes and also described all of the good qualities of honey that make it such a fine food.

Response to all of this has naturally meant more popularization of honey and, therefore, more sales for honey distributors. This publicity is important because it helps maintain good will — that intangible quality that is the backbone of every organization.

There is a case of a national association for one product that failed to see the value of publicity and promotion until it was too late. They got adverse publicity and they were unable to combat it because no good will had been built up. All their efforts to bring back the public's former feeling toward the product have never really succeeded. Don't let this happen to honey! **Support the Institute and keep honey in the public eye!**

Italian Queens

65c Each

GIRARDEAU APIARIES

Tifton, Ga.

Better Bred Queens **Three Banded Italians**

Watch those failing queens and poor colonies. Be sure and replace them with our Better Bred Stock, and watch them pay off.

2 lb. package bees and queen	$2.25
3 lb. package bees and queen	3.00
Queens, each	.50

Calvert Apiaries **Calvert, Alabama**

Insure Your Honey Crop

By Using Berry's Reliable Tested Italian Bees

55 Years with the Bees gives You, after Test, America's Best Package Bees and Queen Bees
Strengthen Those Weak Winter Worn Colonies with Berry's Booster Queenless Package Bees

Prices: Package Bees with Queens and Individual Queen Bee

	Queens	2-lb. Pkg.	3-lb. Pkg.	4-lb. Pkg.	5-lb. Pkg.
1 to 50	$.70	$2.60	$3.50	$4.45	$5.40
50 to 100	.60	2.35	3.25	4.20	5.15
100-up	.50	2.15	3.00	4.00	5.00

Queenless Booster Packages deduct the price of queens

All queens we ship in our packages or individually are of selective Quality. Only those that we ourselves would use in our own apiaries do we ship. The culls we kill.

We guarantee Safe Arrival, prompt shipment, and that our bees are the best to be had at any price.

We clip queens' wings on request free of charge. We have no disease and otherwise from a health standpoint are unsurpassed by any. In 1948 and 1949 we shipped over 20,000 packages of bees without a single complaint as to Nosema and but one complaint as to supersedure.

Oldest Package Shippers in the Old South

M. C. Berry & Sons

Box 684 Montgomery 1, Alabama

Italian Bees and Queens

Book your order early, to get pick of dates.

Health certificate, and live delivery guaranteed.

Packages with Queens:

	2 lb.	3 lb.	Queens
1 to 49	$2.50	$3.45	$.75
50 to 100	2.40	3.25	.70
100-up	2.35	3.15	.65

Homan Bros.
R. 2 Shannon, Miss.

QUEENS

Bright Three Banded Italians

If you need queens you need the very best, and that is just what we have. Let us prove it.

1, 75c; 50, 70c; 100, 65c each.
Tested Queens, $1.50
Breeders, $5.00
No cost for clipping

Taylor Apiaries
Box 249 Luverne, Ala.

Norman's Package Bees

3-Band Italians
Safe Arrival and Satisfaction
—— Prompt Service ——

2 lb. pkg. w. young laying queen, $2.50
3 lb. pkg. w. young laying queen, 3.00
4 lb. pkg. w. young laying queen, 4.00
JOHN A. NORMAN, Ramer, Ala., Rt. 2

FREE FREE FREE

Daughters of Pure Hybrid Queen cost us $50.00 a pair. Buy one for $1.00 and get one free.

Regular Italian Stock

Queens	2-lb.	3-lb.
49c	$2.20	$3.15

Gulf Coast Bee Co.
Schriever, La.

Protect Your Future. Buy Your Extra Savings Bonds Now.

Look This Over – – – Something New

We offer untested queen-daughters of hybrid breeding stock developed by the U. S. Dept. of Bee Culture and distributed by the Honey Bee Improvement Coop. Assn. of Ohio. We also have our regular stock of light colored Italians. Please **specify** "Hybrid" or "Regular" on orders.

Hybrid or Sunkist Italians: 50c each, airmailed, clipped.

Sunkist Bee Company Convent, La.

MACY ELECTRIC UNCAPPING KNIFE

Operates on 110-volt A.C. current. Steady heat. Adjustable thermostat. Plastic handle. 6-foot rubber covered cord.

$15.00

HUTCHISON MFG. CO. **Licensed Manufacturer**
1239 So. Lorena St. **Los Angeles 23, Calif.**

JUST NEWS

(Continued from page 385)

erative now has a packing plant at Umatilla and is ready to handle an unlimited amount of honey.

* * * * *

The Honeybee—An Introduction to Her Sense—Physiology and Behavior

This new book, written by Dr. C. G. Butler, head of the Bee Research Department, Rothamsted Experimental Station, England, is a comprehensive presentation of scientific work done to give a survey of present knowledge concerning the senses of vision, taste, smell, and perception of water of the honey bee. These are taken up in Chapters II to V.

The collection and utilization of pollen is described in Chapter VI.

Six photographic plates, also excellent micro-photographs show the structures of the legs of the worker bees and give a better understanding of how pollen is collected from plants and unloaded into cells.

Chapter VII treats of the collection and utilization of nectar and refers to work done by O. W. Park of Iowa and others.

The final chapter, VIII, on behavior of bees in the field, explains how bees find new sources of nectar and pollen, the constancy of certain marked bees to a relatively restricted area of honey plants, and the behavior of the foragers on their return to the hive, as described by von Frisch.

The contents of the book will be found of unusual interest to readers. Research workers should find this a useful compilation of scientific honey bee information brought together in readable form. The price of the book is $2.50 and is available at Oxford University Press, 114 Fifth Ave., New York 11, N. Y.

* * * * *

A 50-page circular No. 64 (Third Edition) entitled **"New Insecticides: Their Use, Limitations, and Hazard to Human Health"** by R. L. Webster, Entomologist, of Washington Agricultural Station of State College at Pullman, has just been received as we go to press. While we have not had time to examine the circular carefully, it appears to contain authentic and useful information on various insecticides that are now used.

A Famous Strain of
LIGHT COLORED ITALIANS
produced and shipped by
The Most Modern Bee Breeding Establishment on Earth
The Daniels Apiaries
Picayune, Mississippi

Allen Latham's BEE BOOK

The first and only book ever written by the great master of beekeeping, published December, 1949. 200 pages. 27 chapters. Handsomely bound in cloth and sent to you postpaid in special protective container.

$2.95 Postpaid

HALE PUBLISHING COMPANY
Hapeville, Georgia

We are interested in
Buying HONEY
Send sample and price
T. J. Paisley Co.
Medina, Ohio

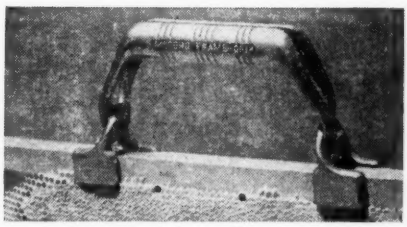
SELL MICHIGAN CLOVER HONEY
We furnish Dealers with best Michigan clover honey, in 60-lb. cans, at wholesale price. If you do not know Michigan clover honey, write us for full information. There is none better. Your customers will like Michigan clover honey. Always sell the best. Get on our mailing list, and see from time to time what we can furnish you.
Townsend Sales Co., Northstar, Mich.

SURE — YOU'LL LIKE IT
Send for Free Sample Copy
The Beekeepers Magazine
Lansing 15-B, Mich.
Established 1938
("Just a Little Independent")

Australasian Beekeeping News
The Leading Bee Journal of the
Southern Hemisphere is the
"AUSTRALASIAN BEEKEEPER"
Subscription 8 shillings per year. Start any time. Inquire for International Money Order for 8 shillings (Australian) at your Post Office.
Write now to the Editor
P. O. Box 20, West Maitland
New South Wales, Australia

Modern Beekeeping
The picture magazine of beekeeping. We show you with pictures how to do the job easier, quicker, and better. Special inventor's page.
1 yr., $1.50; 2 yrs., $2.50; 3 yrs., $3.25.
Modern Beekeeping
Paducah, Kentucky

FRAME GRIP SEND NOW!!



This light modern tool is for easy handling and removal of frames from the bee hive. Thousands of satisfied customers have proven its worth.
$3.00 plus 18c postage fee
McCord Manufacturing Company
Rt. 2 Box 866
San Jose, Calif.

SURPLUS PAINT
Manufacturer's Overstock
$3.75 Red Oxide-Linseed Oil
TINNER'S RED & WHITE HOUSE PAINT (Made with Lin. Oil)
$1.95 gal.
Also available in light or dark Green—light or dark Gray — Ivory — Cream — Buff — Aluminum. Freight charges paid in lots of 30 gal. or more.
SHRIBER'S
1822 Center Ave.
Pittsburgh 19, Pa.

– QUEENS –

Italian Caucasian

For requeening, making increase, and queenless colonies. Whether you want 1 or 1000, we will give you Prompt Service and Good Quality.

Prices

Lots of:	Queens	Packages 2-Pound	3-Pound	4-Pound	5-Pound
1-24	$0.60	$2.75	$3.50	$4.25	$5.00
25-99	.55	2.50	3.25	4.00	4.75
100-up	.50	2.25	3.00	3.75	4.50

Add 75c to above Prices for Tested Queens

For Queenless Package—Deduct Price of Queen
Packages F.O.B. Shipping Point
Queens Postpaid—Airmailed or Clipped
(No Extra Cost)

The Stover Apiaries Mayhew, Miss.

LOW JUNE PRICES

Very best quality queens and packages. Complete satisfaction guaranteed
2-pound package with queen, $2.00 3-pound package with queen, $2.50
Queens, 50c each 3-band Italians only

Sunrise Apiaries Petal, Mississippi

Three-Banded
Italian Bees and Queens

We are trying to keep our prices in line with the low prices of honey this year. We can supply you with the same high quality bees and queens that we have been producing the past TWENTY YEARS. Prices as follows:

2-lb. package with queen, $2.25
3-lb. package with queen, 3.15
Untested Italian queens, .75

New light weight packages — overweight — disease-free. Guaranteed live delivery at your station. For queenless package deduct price of queen.

Lucedale Apiaries
Lucedale, Mississippi

Texas

Italian Queens for Honey Producers

Prices:

1 to 24 ..... $0.75 each
25 to 99 ..... .70 each
Tested Queens ..... 2.00 each

Queens clipped or air mailed at no extra cost.

Queens are reared from flowers of the Rio Grande Valley, are caged and shipped the same day, and safe arrival assured. Queen breeders: N. J. Barnett and M. G. Smith.

Rio Grande Apiaries

Box 895 Pharr, Texas

Protect Your Future. Buy Your Extra Savings Bonds Now.

York's Package Bees and Queens for 1950

QUALITY BRED ITALIANS

The Strain Preferred by Leading Honey Producers
Prices with Young Laying Queens

Packages	2-lb.	3-lb.	4-lb.
1 to 24	**$3.25 each**	**$4.00 each**	**$4.75 each**
25 or more	**3.00 each**	**3.75 each**	**4.50 each**

Young Laying Queens, $1.00 each; Tested, $2.00 each.
Queenless packages, deduct $1.00 per package
Order direct from this ad and save time. Book order now and have bees shipped when wanted.

York Bee Company **Jesup, Georgia**
(The Universal Apiaries)

JENSEN'S Package Bees and Queens

"Magnolia State" Italians

You want QUALITY bees and queens or you want none at all.
You want SERVICE when you place an order—no waiting when you shoot your order to Jensen's.
Specializing in queen rearing since 1915, we know how to produce the best, and nothing less goes here.
You want results in the hives, and our bees and queens will take care of that, if you have the bee pasture.

	Queens	2 lb. pkg. w/qn.	Queenless	3 lb. pkg. w/qn.	Queenless
1-24	$1.00	$3.50	$2.50	$4.50	$3.50
25-99	.90	3.25	2.35	4.25	3.35
100-up	.80	3.00	2.20	4.00	3.20

D. R. Hybrid Queens of Dadant Starline Stock. Daughters of instrumentally inseminated mothers, mated to drones of same stock (different lines). Isolation location for best control of natural mating, assuring as nearly 100% purity of strain as is possible.
1-24, $1.25; 25-99, $1.15; 100-999, $1.05; 1000 up, 95c each

JENSEN'S APIARIES **Macon, Miss.**

– FOR POLLINATION –

Disease Resistant Queens and Package Bees

Your choice of shipping dates
1950 PRICES
Packages with DR Queens

Quantity	Queens	2 lbs.	3 lbs.	4 lbs.	5 lbs.
1 to 9	$1.30 ea.	$4.00 ea.	$5.00 ea.	$6.00 ea.	$7.00 ea.
10 to 49	1.20 ea.	3.75 ea.	4.75 ea.	5.75 ea.	6.75 ea.
50 to 99	1.10 ea.	3.50 ea.	4.50 ea.	5.50 ea.	6.50 ea.

Iowa Beekeepers' Association

State House **Des Moines, Iowa**

BESSONET'S ITALIAN QUEENS

We compete with QUALITY and not PRICE. You must decide the type of queens you will use in your hives. Our Italians are the result of a lifetime of experience and are produced by the best scientific means known.
Prices: 1-24, 80c each **25-up, 75c each, air mailed**

Bessonet Bee Company **Donaldsonville, La.**